

**EXHIBIT 8**  
**CENSUS INFORMATION**

# U.S. Census Bureau

## State & County QuickFacts

### East Baton Rouge Parish, Louisiana

People QuickFacts	East Baton Rouge Parish	Louisiana
Population, 2005 estimate	411,417	4,523,628
Population, percent change, April 1, 2000 to July 1, 2005	-0.3%	1.2%
Population, 2000	412,852	4,468,976
Population, percent change, 1990 to 2000	8.6%	5.9%
Persons under 5 years old, percent, 2004	7.1%	7.2%
Persons under 18 years old, percent, 2004	24.9%	25.8%
Persons 65 years old and over, percent, 2004	10.3%	11.7%
Female persons, percent, 2004	52.0%	51.4%
White persons, percent, 2004 (a)	54.1%	64.1%
Black persons, percent, 2004 (a)	42.6%	33.0%
American Indian and Alaska Native persons, percent, 2004 (a)	0.2%	0.6%
Asian persons, percent, 2004 (a)	2.3%	1.4%
Native Hawaiian and Other Pacific Islander, percent, 2004 (a)	0.0%	0.0%
Persons reporting two or more races, percent, 2004	0.8%	0.8%
Persons of Hispanic or Latino origin, percent, 2004 (b)	2.2%	2.8%
White persons, not Hispanic, percent, 2004	52.2%	61.8%
Living in same house in 1995 and 2000, pct age 5+, 2000	51.8%	59.0%
Foreign born persons, percent, 2000	3.7%	2.6%
Language other than English spoken at home, pct age 5+, 2000	7.7%	9.2%
High school graduates, percent of persons age 25+, 2000	83.9%	74.8%
Bachelor's degree or higher, pct of persons age 25+, 2000	30.8%	18.7%
Persons with a disability, age 5+, 2000	72,553	880,047
Mean travel time to work (minutes), workers age 16+, 2000	23.2	25.7
Housing units, 2004	176,463	1,919,859
Homeownership rate, 2000	61.6%	67.9%
Housing units in multi-unit structures, percent, 2000	28.9%	18.7%
Median value of owner-occupied housing units, 2000	\$98,800	\$85,000
Households, 2000	156,365	1,656,053
Persons per household, 2000	2.55	2.62
Per capita money income, 1999	\$19,790	\$16,912

Median household income, 2003	\$37,204	\$33,799
Persons below poverty, percent, 2003	16.4%	18.1%

<b>Business QuickFacts</b>	<b>East Baton Rouge Parish</b>	<b>Louisiana</b>
Private nonfarm establishments, 2003	11,471	102,245 <sup>1</sup>
Private nonfarm employment, 2003	209,140	1,603,922 <sup>1</sup>
Private nonfarm employment, percent change 2000-2003	-2.0%	0.7% <sup>1</sup>
Nonemployer establishments, 2003	24,740	268,360
Manufacturers shipments, 2002 (\$1000)	13,680,119	89,540,799
Retail sales, 2002 (\$1000)	5,031,137	41,885,192
Retail sales per capita, 2002	\$12,262	\$9,356
Minority-owned firms, percent of total, 1997	18.5%	14.1%
Women-owned firms, percent of total, 1997	23.5%	23.9%
Housing units authorized by building permits, 2004	2,150	22,989
Federal spending, 2004 (\$1000)	3,178,305	32,954,059 <sup>1</sup>

<b>Geography QuickFacts</b>	<b>East Baton Rouge Parish</b>	<b>Louisiana</b>
Land area, 2000 (square miles)	455	43,562
Persons per square mile, 2000	906.5	102.6
FIPS Code	033	22
Metropolitan or Micropolitan Statistical Area	Baton Rouge, LA Metro Area	

1: Includes data not distributed by county.

(a) Includes persons reporting only one race.

(b) Hispanics may be of any race, so also are included in applicable race categories.

FN: Footnote on this item for this area in place of data

NA: Not available

0: Suppressed to avoid disclosure of confidential information

X: Not applicable

S: Suppressed; does not meet publication standards

7: Value greater than zero but less than half unit of measure shown

F: Fewer than 100 firms

Source: U.S. Census Bureau: State and County QuickFacts. Data derived from Population Estimates, 2000 Census of Population and Housing, 1990 Census of Population and Housing, Small Area Income and Poverty Estimates, County Business Patterns, 1997 Economic Census, Minority- and Women-Owned Business, Building Permits, Consolidated Federal Funds Report, 1997 Census of Governments.

Last Revised: Thursday, 08-Jun-2006 09:32:12 EDT

**EXHIBIT 9**  
**FLOOD INSURANCE RATE MAP,**  
**CORRESPONDENCE TO AND FROM CORPS OF ENGINEERS**



**FIRM**

**FLOOD INSURANCE RATE MAP**

**EAST BATON ROUGE  
PARISH,  
LOUISIANA  
(BATON ROUGE AND VICINITY)**

**PANEL 60 OF 125**

(SEE MAP INDEX FOR PANELS NOT PRINTED)



PANEL LOCATION

**COMMUNITY-PANEL NUMBER**

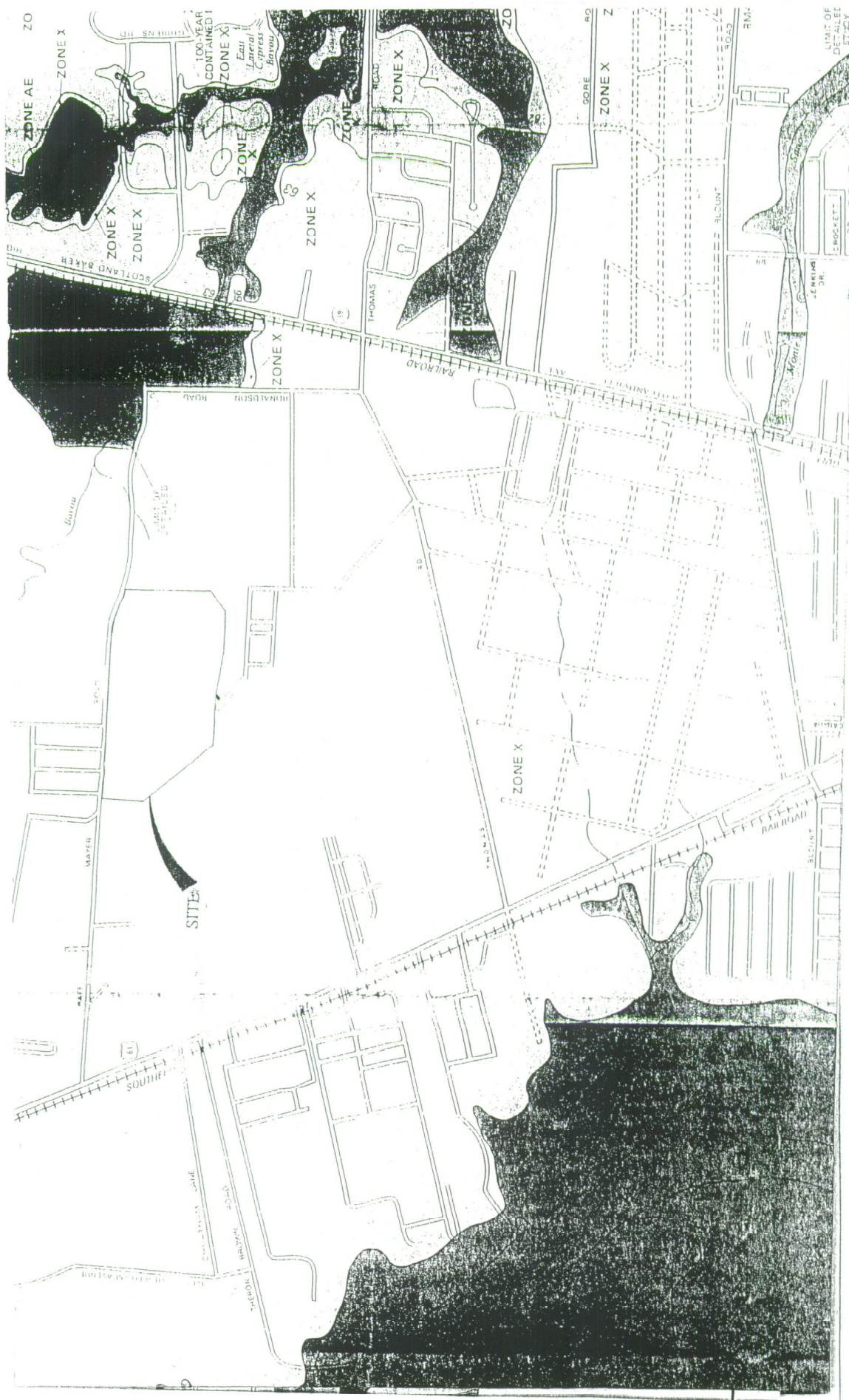
**220058 0060 D**

**MAP REVISED:**

**MAY 17, 1993**



**Federal Emergency Management Agency**





DEPARTMENT OF THE ARMY

NEW ORLEANS DISTRICT CORPS OF ENGINEERS

P.O. BOX 60267

NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO  
ATTENTION OF:

February 27, 1996

Operations Division  
Surveillance and Enforcement Section

Ms. Renee Rodi  
Acacia Environmental Consultants, Inc.  
5280 South Belvedere  
Baton Rouge, Louisiana 70808

Dear Ms. Rodi:

Reference is made to our letter dated January 31, 1996, concerning the wetland status of your property located in Section 35, T. 5 S., R. 1 W., East Baton Rouge Parish, Louisiana (enclosed map). Specifically, this property is identified as approximately 90 acres on Rafe Mayer Road.

We have conducted an additional field inspection on February 14, 1996. Based on the results of this investigation and a review of previous data collected, we have determined that part of this property is wetland and subject to Corps' jurisdiction. The wetland/nonwetland interface was delineated in the field and flagged by you with ribbon. Subsequently, this wetland line was surveyed and drawn on the enclosed map. A Department of the Army (DA) permit under Section 404 of the Clean Water Act will be required prior to the deposition or redistribution of dredged or fill material into this wetland. Additionally, a DA permit will be required if you propose to deposit dredged or fill material into the pond.

You are advised that this determination is valid for a period of five years from the date of this letter unless new information warrants revision of the delineation before the expiration date.

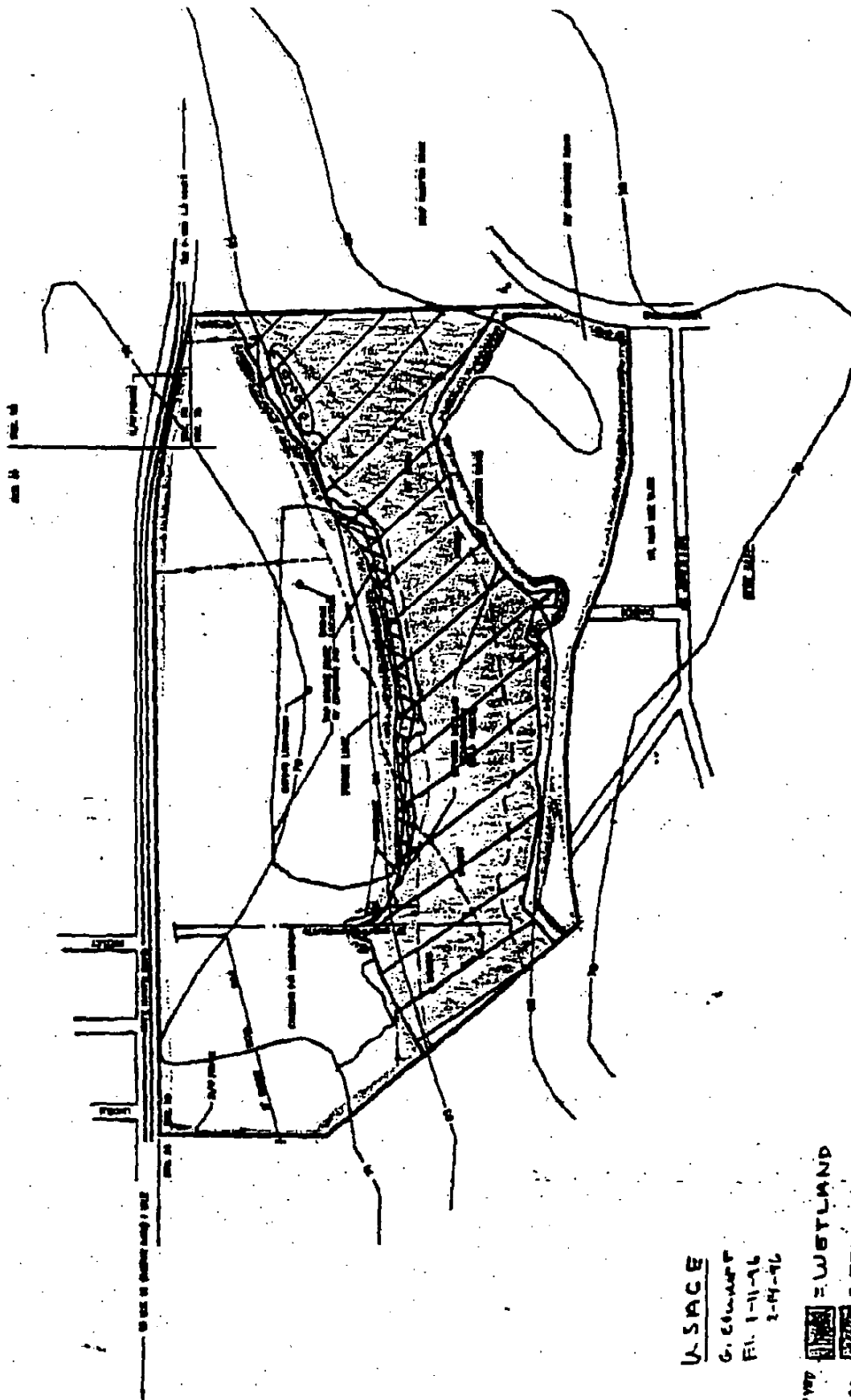
Should there be questions concerning this determination, please contact Gary Couret at (318) 232-6373 and refer to Account No. 12130. If you have specific questions regarding the permit process or permit applications, please contact our Eastern Evaluation Section at (504) 862-1270.

Sincerely,

*Myata R. Christian*

Ronald J. Ventola  
for Chief, Regulatory Functions Branch

Enclosure



USACE

G. C. HARRIS

Feb. 1-11-96

2-11-96

FLMCOPT + SURVEYED

BY CONSULTANT

APPROVED BY CORPS

REVISED 2-17-96

ACCT. #12130

[Hatched Box] = WETLAND

[Cross-hatched Box] = OTHER WATERS

[Stippled Box] = AUTHORIZED WORK

[Solid Box] = WETLAND

[Dotted Box] = NONWETLAND



ENGINEERING

ASSOCIATES, INC.

CONSULTING ENGINEERS

CIVIL • ENVIRONMENTAL • LAND SURVEYING

September 6, 2006

U.S. Army Corps of Engineers  
 New Orleans District  
 Regulatory Functions Branch  
 P.O. Box 62067  
 New Orleans, LA 70160  
 Attn: Mr. Ronald J. Ventola, Chief

Ronaldson Field Construction and Demolition Debris Landfill  
1500 Rafe Mayer Road  
East Baton Rouge Parish, Louisiana

Dear Mr. Ventola:

Our client, Natural Resources Recovery, Inc., is submitting a permit renewal application to the Louisiana Department of Environmental Quality for the continued operation of their non-hazardous solid waste disposal facility (Ronaldson Field). Ronaldson Field is located on Rafe Mayer Road approximately 0.8 miles west of LA Highway 19 in East Baton Rouge Parish.

In accordance with Louisiana Solid Waste Regulations, specifically LAC 33:VII.521.A.1.e, applicants for Solid Waste Permits must provide "a list of all known historic sites, recreation areas, archeological sites, designated wildlife management areas, swamps and marshes, wetlands, habitats for endangered species, and other sensitive ecological areas within 1,000 feet of the facility perimeter or as otherwise appropriate." The center of the solid waste facility is located at Latitude 30° 33' 55" and Longitude 91° 11' 12". Enclosed is a topographic map indicating the area that includes 1,000 feet from the outermost boundary of the solid waste facility. We are hereby requesting correspondence from your office regarding the presence of absence of the areas/habitats discussed above.

If you have any questions or require further information, please contact me at (225) 926-2025.

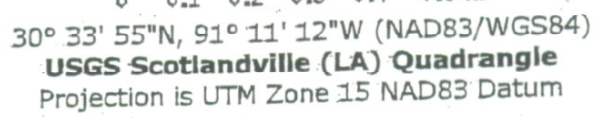
Sincerely,

ENGINEERING ASSOCIATES, INC.

Stephen J. Burnham, P.E.  
 President

c Mr. Sid Brian, Natural Resources Recovery, Inc.





M=1.296  
G=0.922



REPLY TO  
ATTENTION OF:

## DEPARTMENT OF THE ARMY

NEW ORLEANS DISTRICT, CORPS OF ENGINEERS

P.O. BOX 60267

NEW ORLEANS, LOUISIANA 70160-0267

November 6, 2006

96141

Operations Division  
Surveillance and Enforcement Section

Mr. Stephen Burnham  
Engineering Associates, Inc.  
1415 Delplaza Drive Suite B  
Baton Rouge, LA 70815

Dear Mr. Burnham:

Reference is made to your request for a U.S. Army Corps of Engineers' (Corps) jurisdictional determination on property located in Section 35, Township 5 South, Range 1 West, East Baton Rouge Parish, Louisiana (enclosed map). Specifically, this property is identified as the Ronaldson Field Construction and Debris Landfill site at 1500 Rafe Mayer Road.

Based on review of recent maps, aerial photography, soils data, and a previous determination we have determined that part of the property is wetland and subject to Corps' jurisdiction. The approximate limits of the wetland are designated in red on the map. A Department of the Army permit under Section 404 of the Clean Water Act will be required prior to the deposition or redistribution of dredged or fill material into this wetland.

You are advised that this approved jurisdictional determination is valid for a period of 5 years from the date of this letter unless new information warrants revision prior to the expiration date.

Should there be any questions concerning these matters, please contact Mr. Pierre Castaing at (504) 862-1726 and reference our Account No. MVN-2006-3737-1-SG. If you have specific questions regarding the permit process or permit applications, please contact our Central Evaluation Section at (504) 862-1270.

Sincerely,

for Ronald J. Ventola  
Chief, Regulatory Branch

Enclosures



USACE

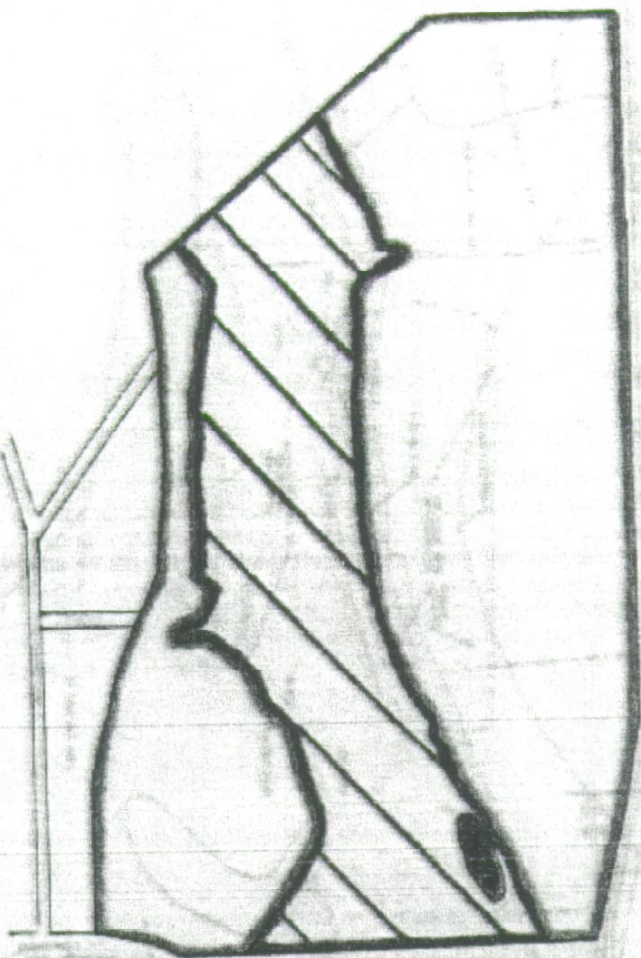
1. H. 11-6-06

2. Est. 11-6-06

FOR 11-6-06

(11-6-06-11-6-06)

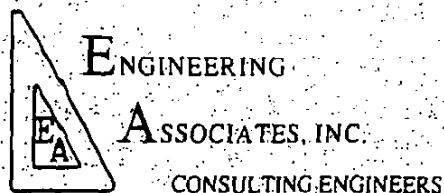
- ☒ WETLAND
- ☒ NON-WETLAND
- ☐ OTHER WATERS



APPROVED  
JURISDICTIONAL DETERMINATION



**EXHIBIT 10**  
**TRAFFIC LETTER**



CIVIL • ENVIRONMENTAL • LAND SURVEYING

September 6, 2006

Mr. Ingolf Partenheimer  
Office of the Planning-Commission  
City of Baton Rouge, Parish of East Baton Rouge  
P.O. Box 1471  
Baton Rouge, LA 70821

Ronaldson Field Construction and Demolition Debris Landfill  
1500 Rafe Mayer Road  
East Baton Rouge Parish, Louisiana

Dear Mr. Partenheimer:

Our client, Natural Resources Recovery, Inc., is submitting a permit renewal application to the Louisiana Department of Environmental Quality for the continued operation of their non-hazardous solid waste disposal facility (Ronaldson Field). Ronaldson Field is located on Rafe Mayer Road approximately 0.8 miles west of LA Highway 19 in East Baton Rouge Parish.

We are hereby requesting correspondence confirming that the access road adjacent to Ronaldson Field (Rafe Mayer Road) is satisfactory as a means of ingress/egress to the facility. Similar correspondence provided to Ronaldson Field in 1996 has been attached for your review and use. Please forward your correspondence to me at the address included hereon.

We appreciate your assistance in this matter. If you have any questions or require further information, please contact me at (225) 926-2025.

Sincerely,

Stephen J. Burnham, P.E.  
President

c Mr. Sid Brian, Natural Resources Recovery, Inc.

C:\09-06\96141\partenheimer.0918

FEB-22-2007 15:00

TRAFFIC ENGINEERING

225 389 7633

P.02

**Department of Public Works**City of Baton Rouge  
Parish of East Baton RougePost Office Box 1471  
Baton Rouge, Louisiana  
70821

October 3, 2006

Mr. Rod Banks  
Program Manager, Street/Road Rehab Program  
Post Office Box 1471  
Baton Rouge, LA 70821Re: Ronaldson Field Construction and Demolition Debris Landfill  
1500 Rafe Mayer Road

Dear Rod:

Please find attached a copy of the letter dated September 6, 2006 from Stephen J. Burnham regarding the above captioned location and also, a previous memo from Mr. Ray Burgess dated February 5, 1996. Natural Resources Recovery, Inc. is submitting a permit renewal application to the Louisiana Department of Environmental Quality. Please let me know if you are in concurrence.

Should you have any questions or if I can be of further assistance, please do not hesitate to call me.

Respectfully,

A handwritten signature in cursive script, reading "Ingolf A. Partenheimer".

Ingolf A. Partenheimer, P.E., P.T.O.E.  
Chief Traffic Engineer

IAP/tah

FEB-22-2007 15:32

TRAFFIC ENGINEERING

225 389 7633

P.02

## CITY-PARISH DEPARTMENTAL MEMORANDUM

Date Oct. 16, 2006

**To:** Ingolf A. Partenheimer, Chief Traffic Engineer

**From:** R. K. Banks, Program Manager, Street/Road Rehab. Program

**Subject:** Ronaldson Field Construction and Demolition Debris Landfill  
1500 Rafe Mayer Road

Rafe Mayer Road was rehabilitated in late 1995. A recent inspection found some edge failure in areas with narrow shoulders and deep ditches, which may be attributed to inadequate lateral support. Otherwise, the road shows no major distresses and seem to be adequate for the traffic load.

The estimated life of an asphalt concrete surface on a parish road is 10-15 years. Consequently, I anticipate another rehabilitation of Rafe Mayer Road within the next 5 years.

In conclusion, I agree with Mr. Burgess's opinion that the road is adequately designed for the proposed traffic and I have no objection to the requested permit renewal.

*R. K. Banks*  
R. K. Banks  
Program Manager

RKB:dcd

cc: Pete Newkirk, Director w/attach.  
Bryan Harmon, Deputy Director/Chief Engineer w/attach.

RECEIVED  
OCT 16 2006  
TRAFFIC ENGINEERING

## CITY-PARISH DEPARTMENTAL MEMORANDUM

Date Feb. 5, 1996

To: Dwight Fox, Traffic Engineer

From: Ray W. Burgess, Program Manager, Street/Road Rehab. Program

Subject: Proposed Construction/Demolition Landfill  
Old Rafe Meyer Road

This will have reference to the letters dated October 12 and 23, 1995 from Michael B. Songy, representing Natural Resources Recovery, Inc., to you, and your letter dated October 19, 1995 to Mr. Songy, all having to do with a proposed construction/demolition landfill on Old Rafe Meyer Road.

Based on the estimated loads and traffic presented in Mr. Songy's letter dated October 23, 1995, the road as designed and constructed, should be satisfactory.

Sincerely,

*Ray W. Burgess*  
Ray W. Burgess  
Program Manager

RWB:dcd

cc: Michael Songy ✓

<input type="checkbox"/> CDS	_____	<input checked="" type="checkbox"/> MBS	_____
<input type="checkbox"/> NJC	_____	<input checked="" type="checkbox"/> RJR	_____
<input type="checkbox"/> WCM	_____	<input type="checkbox"/> CJP	_____

FEB 13 1996

☒ JEFF \_\_\_\_\_ ☐ \_\_\_\_\_  
Project No. 75127.00  
File Name Corr

**EXHIBIT 11**  
**STATE OF LOUISIANA DEPARTMENT OF CULTURE,**  
**RECREATION AND TOURISM, OFFICE OF CULTURE**  
**DEVELOPMENT (ARCHEOLOGICAL SITES)**



Edwin W. Edwards  
Governor

Mark H. Filizin  
Secretary

Arinda Schwegmann  
Lieutenant Governor  
and Commissioner

State of Louisiana  
Department of Culture, Recreation and Tourism

Gerri Hobdy  
Assistant Secretary

OFFICE OF CULTURAL DEVELOPMENT

October 26, 1995

☐ CDS \_\_\_\_\_ ☐ MBS \_\_\_\_\_  
☐ NJC \_\_\_\_\_ ☒ RJR \_\_\_\_\_  
☐ WCM \_\_\_\_\_ ☐ CJP \_\_\_\_\_

OCT 27 1995

Mr. Ronald J. Rodi  
Chenevert, Songy, Rodi, Soderberg  
10725 Perkins Road, Suite 200  
Baton Rouge, Louisiana 70810

☐ \_\_\_\_\_ ☐ \_\_\_\_\_  
 Project No. 95127.00  
 File Name Permit

Re: Ronaldson Field Solid Waste Permit Application  
 Rafe Mayer Road  
 CSRS Project No. 95127.00  
 Baton Rouge, East Baton Rouge Parish, Louisiana

Dear Mr. Rodi:

Reference is made to your letter dated October 4, 1995, concerning the above solid waste permit application. A review of our site file data reveals that there are no known archaeological sites or historical structures located within 1000' of the permit site.

If we may be of further assistance, do not hesitate to contact my staff in the Divisions of Archaeology and Historic Preservation.

Sincerely,

Gerri Hobdy  
State Historic Preservation Officer

GH:MM:s

Thomas H. Eubanks, Ph.D., Director  
 Division of Archaeology  
 P. O. Box 44247 (1051 N. Third Street)  
 Baton Rouge, LA 70804  
 (504) 342-8170  
 Fax: (504) 342-8173

**EXHIBIT 12**  
**STATE OF LOUISIANA DEPARTMENT OF**  
**WILDLIFE AND FISHERIES**



# State of Louisiana



Joe L. Herring  
Secretary

Department of Wildlife and Fisheries  
Post Office Box 98000  
Baton Rouge, LA 70898-9000

(504) 765-2800

October 12, 1995

Edwin W. Edwards

Governor

☒ MBS

☒ RJR

☐ CJP

☐ CDS

☐ NJC

☐ WCM

Ronald J. Rodi, P.E.  
CSRS  
10725 Perkins Road, Suite 200  
Baton Rouge, LA 70810

OCT 16 1995

☐

☐

Project No.

95171-00

File Name

Permit

RE: Solicitation of views on Threatened, Endangered and Rare Species for  
Ronaldson Field Solid Waste Permit Application.

Dear Mr. Rodi:

Personnel of the Natural Heritage Program have reviewed the preliminary data for the captioned project. In reviewing our database, no rare, threatened, or endangered species or critical habitats were found within the area of the captioned project that lies in Louisiana. No state or federal parks, wildlife refuges, or wildlife management areas are known at the specified site within Louisiana's boundaries.

The Louisiana Natural Heritage Program has compiled data on rare, endangered, or otherwise significant plant and animal species, plant communities, and other natural features throughout the state of Louisiana. Heritage reports summarize the existing information known at the time of the request regarding the location in question. They should not be considered final statements on the biological elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments.

The Louisiana Natural Heritage Program requires that this office be acknowledged in all reports as the source of all data provided here.

Sincerely,

*Gary Lester*

Gary Lester, Coordinator

Louisiana Natural Heritage Program

GDL:dkc

96141

**State of Louisiana****Kathleen Babineaux Blanco**  
GovernorDepartment of Wildlife & Fisheries  
Post Office Box 98000  
Baton Rouge, LA 70898-9000  
(225) 765-2800**Janice A. Lansing**  
Acting Secretary

**Date** October 12, 2006

**Name** Stephen Burnham

**Company** Engineering Associates

**Street Address** 1415 DelPlaza Drive Suite B

**City, State, Zip** Baton Rouge, LA 70815

**Project** Natural Resources Recovery: Permit renewal application for Ronaldson Field waste disposal facility in East Baton Rouge Parish

**Invoice Number** 06101205

Personnel of the Habitat Section of the Fur and Refuge Division have reviewed the preliminary data for the captioned project. After careful review of our database, no impacts to rare, threatened, or endangered species or critical habitats are anticipated for the proposed project. No state or federal parks, wildlife refuges, scenic streams, or wildlife management areas are known at the specified site within Louisiana's boundaries.

The Louisiana Natural Heritage Program (LNHP) has compiled data on rare, endangered, or otherwise significant plant and animal species, plant communities, and other natural features throughout the state of Louisiana. Heritage reports summarize the existing information known at the time of the request regarding the location in question. The quantity and quality of data collected by the LNHP are dependent on the research and observations of many individuals. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in Louisiana have not been surveyed. This report does not address the occurrence of wetlands at the site in question. Heritage reports should not be considered final statements on the biological elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. LNHP requires that this office be acknowledged in all reports as the source of all data provided here. If at any time Heritage tracked species are encountered within the project area, please contact the LNHP Data Manager at 225-765-2643. If you have any questions, or need additional information, please call 225-765-2357.

Sincerely,

Gary Lester, Coordinator  
Natural Heritage Program

**EXHIBIT 13**  
**STATE OF LOUISIANA OFFICE OF STATE PARKS**



MITCHELL J. LANDRIEU  
LIEUTENANT GOVERNOR

**State of Louisiana**  
OFFICE OF THE LIEUTENANT GOVERNOR  
DEPARTMENT OF CULTURE, RECREATION & TOURISM  
OFFICE OF STATE PARKS

ANGÈLE DAVIS  
SECRETARY

STUART JOHNSON, PH.D.  
ASSISTANT SECRETARY

September 13, 2006

Mr. Stephen J. Burnham  
President, Engineering Associates, Inc.  
1415 Delplaza Drive  
Suite B  
Baton Rouge, LA 70815

Re: Ronaldson Field Construction and Demolition Debris Landfill

Dear Mr. Burnham,

I am in receipt of your solicitation of views request for the renewal application for continued operation of the Ronaldson Field facility.

The Division of Outdoor Recreation in the Louisiana Office of State Parks administers the Land and Water Conservation Fund program for Louisiana. In this capacity we compile an inventory of recreational sites within the state for publication in the Statewide Comprehensive Outdoor Recreation Plan (SCORP) published periodically. The most recent SCORP was published for the period of 2003-2008 with an inventory developed in 2003.

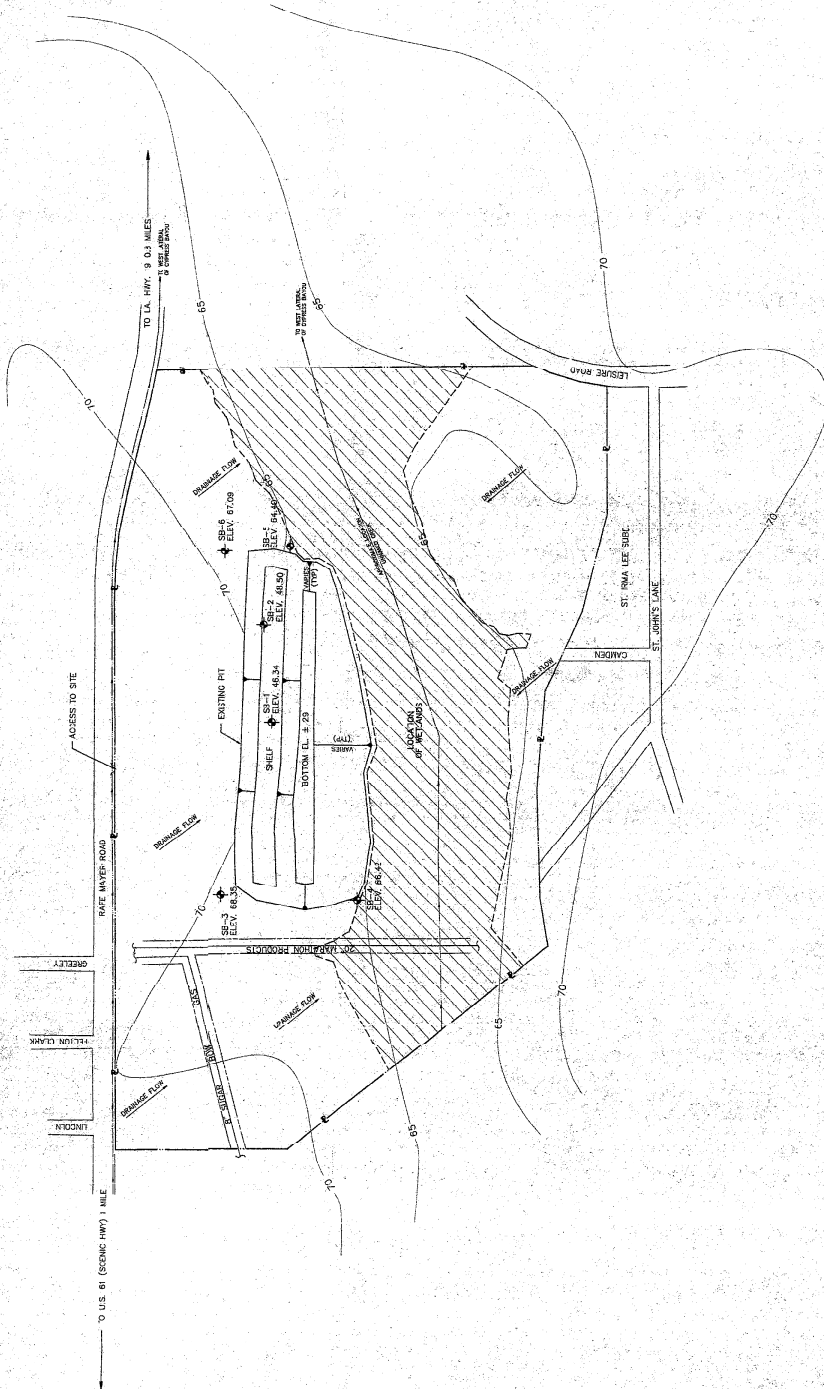
Based on the information provided, there does not appear to be any conflict regarding this proposed project with existing recreational facilities identified in the most recent SCORP.

Sincerely,

A handwritten signature in black ink, appearing to read "Cleve Hardman".

Cleve Hardman  
Director of Outdoor Recreation

**EXHIBIT 14**  
**SITE PLAN-EXISTING LAYOUT**  
**(PRIOR TO CONSTRUCTION OF LANDFILL)**



SITE PLAN - EXISTING LAYOUT

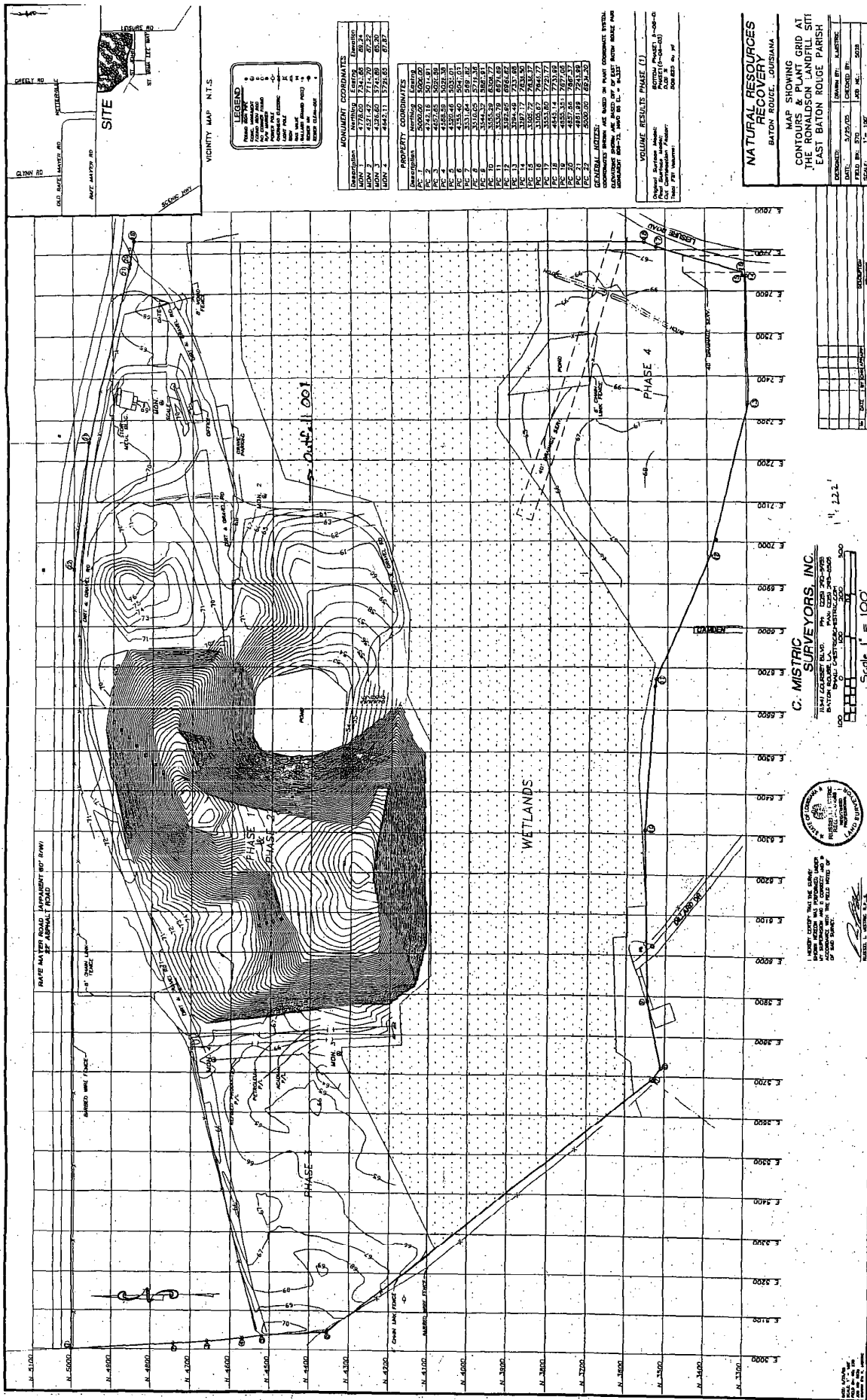
95127 DESNOUGS\NOOREVNS\SHITRE/



### LEGEND

PROPERTY LINE  
DRAINAGE FLOW  
SOIL BORING LOCATION  
APPLICANT R/W LINE  
EXISTING CONTIGUOUS  
LIMIT OF WETLANDS  
EXISTING WETLANDS

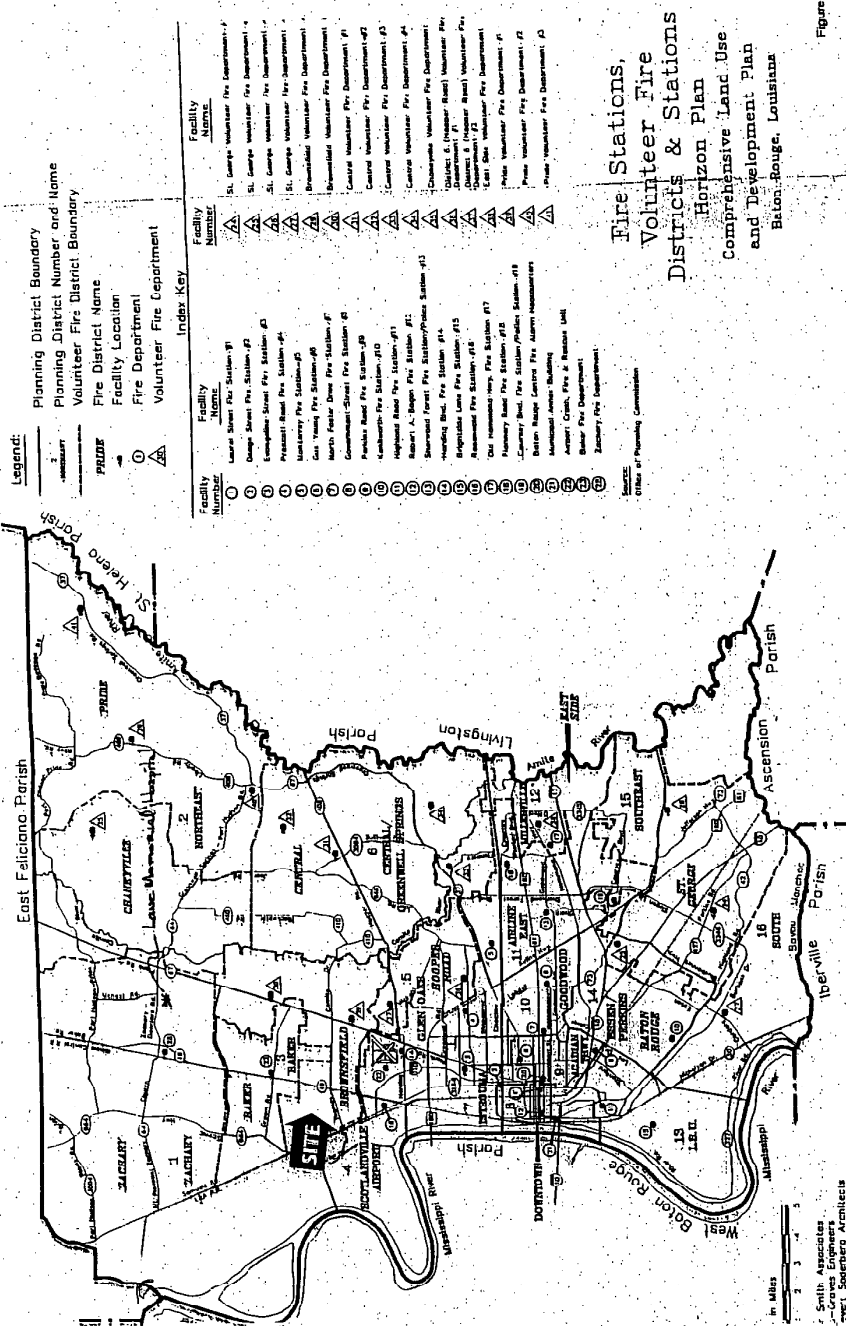
**EXHIBIT 15**  
**MAP SHOWING CONTOURS AND PLANT GRID**



MAP FILE 2-2-



**EXHIBIT 16**  
**FIRE STATION AND HOSPITAL LOCATION MAP**  
**AND FIRE STATION/HOSPITAL CORRESPONDENCE**



Fire Stations,  
Volunteer Fire  
Districts & Stations  
Horizon Plan  
Comprehensive Land Use  
and Development Plan  
Baton Rouge, Louisiana

Figure



ORAY JOHNSON  
FIRE CHIEF

ALSEN ST. IRMA LEE VOLUNTEER FIRE DEPARTMENT  
674 OLD RAFFAEL MAYER ROAD  
BATON ROUGE, LOUISIANA 70807  
(225) 774-3473 / Fax (225) 774-3476



January 26, 2007

Mr. Stephen J. Burnham  
Ronaldson Field Construction and Demolition Landfill  
1500 Rafe Mayer Road  
Baton Rouge, LA 70807

Dear Mr. Burnham:

Alsen St. Irma Lee Volunteer Fire Department along with Baton Rouge Fire Department Hazardous Material Unit will respond to any hazardous incident when needed. If you have any other questions or require further information, please contact me at (225) 774-3473.

Respectfully Submitted,

*Oray Johnson*  
Oray Johnson  
Fire Chief

cc: file



Lane Regional  
Medical Center

*Changing and Growing With You*

6300 Main Street  
Zachary, Louisiana 70791  
(225) 658-4000 TELEPHONE  
LaneRMC.org

October 3, 2006

Stephen J. Burnham, P.E.  
President  
Engineering Associates, Inc.  
1415 Delplaza Drive  
Baton Rouge, LA 70815

Dear Mr. Burnham:

Lane Regional Medical Center is equipped to accept and treat patients involved in a hazardous materials incident. If you should have specific questions regarding treatment capabilities, please feel free to contact our Emergency Room Director, Billy Conerly, RN.

Sincerely,

Randall M. Olson  
Chief Executive Officer

RMO:bsr

cc: Billy Conerly, RN

**EXHIBIT 17**  
**EMERGENCY PROCEDURES PLAN AND**  
**EMPLOYEE TRAINING PROGRAM**

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- 1.3 Administration
- 1.4 Organization

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### 4.0 EMERGENCY COORDINATION

### 5.0 EMERGENCY EQUIPMENT

### 6.0 POST-INCIDENT ACTION

### 7.0 CASUALTY CONTROL PLAN

### 8.0 FIRE CONTROL PLAN

### 9.0 EMERGENCY FIRST AID PROCEDURES

## 1.0 SCOPE

### 1.1 Introduction

The attached procedure outlines the appropriate functions for handling a site emergency. It sets up a structure for directing the overall situation and establishes a framework for organization, control and communications. This procedure identifies the information required to effectively respond to potential hazards to human health or environment which may result from accidents, fire or other unplanned occurrences which can happen at the Ronaldson Field Landfill and Recovery Facility. The procedure leaves flexible the response to specific situations.

### 1.2 Plan

This procedure is designed to establish a pre-event plan for coping with a major disaster or emergency, safely evacuating employees from the site and coordinating with local emergency services as required.

### 1.3 Administration

Each employee will be trained in proper use of this procedure carrying out his responsibilities as directed. Only the designated staff personnel will have the authority to implement this procedure.

### 1.4 Organization

The implementation and execution of the plan involves the actions of the Emergency Coordinator (EC), who is designated by the facility General Manager.

## 2.0 EMERGENCY PROCEDURES

In the event of an employee discovering an imminent or actual emergency situation, the employee shall immediately notify the EC or his designee, as well as personnel in the immediate area who may be in danger.

Upon notification, the EC or designee will:

- Determine the exact source, amount and area of involvement of the emergency;
- Assess the possible hazards to human health and the environment;
- Notify other applicable agencies with a preliminary assessment of the situation, notification of hazards beyond the site boundaries, and request appropriate assistance (see Section 3.0 of this plan);
- If casualties are involved, activate the Casualty Control Plan (see Section 7.0 of this plan);
- If a fire occurs, activate the Fire Control Plan (see Section 8.0 of this plan);
- If operations are stopped, monitor for potentially hazardous situations; and

Discontinue waste unloading at the incident area until cleanup procedures are completed.

### 3.0 EMERGENCY PHONE NUMBERS

The following agencies may be notified by the site for service in the event of an emergency:

AGENCY	PHONE NUMBERS
Fire Department	911
Ambulance Service	911
Police Department	911
Earl K. Long Hospital	358-1000
Louisiana Department of Environmental Quality	
Baton Rouge, LA	
Solid Waste	765-0249
Water Quality	765-0634
24-Hour Hotline	342-1234
U.S. Environmental Protection Agency	
Region IV, Dallas, TX	1-214-655-6444
Toxic Chemical and Oil Spills	1-800-424-8802
National Poison Control	1-800-256-9822

Give the following information to all notified agencies:

- Your name and telephone number
- Name and address of the facility
- Time and type of incident (e.g., fire/injury)
- Possible material(s) involved, to the extent known
- The extent of injuries, if any
- Possible hazards to human health or the environment outside the facility

The EC or his designee will meet with representatives of local fire and police departments to discuss information concerning:

- facility layout;
- possible hazards;
- emergency equipment location and operation;
- communications equipment; and
- other critical information and procedures.

### 4.0 EMERGENCY COORDINATOR

The Emergency Coordinator (EC) will be designated by the facility General Manager. The EC or his designee will be responsible for coordinating all emergency response measures.



## 5.0 EMERGENCY EQUIPMENT

The EC will maintain an updated list of the physical description, location and capabilities of all emergency equipment required onsite. As a minimum, the facility will have available the following types of emergency equipment.

- Alarm and communication materials:
  - telephones
  - radios
- Fire Equipment:
  - ABC dry chemical fire extinguishers will be provided in all operating areas
  - onsite fire extinguishers are inspected routinely to verify operation

## 6.0 POST-INCIDENT ACTIONS

The EC or his designee will ensure that the affected areas of the site are ready for operations to resume. Additionally, treat, store, or dispose of uncovered waste, contaminated soil or surface water, or any other material that resulted from the incident with the requirements of the Federal, State, and Local authorities.

If applicable, submit a written report of the incident to the Louisiana Department of Environmental Quality including:

- name, address, and telephone number of the owner or operator;
- name, address, and telephone number of the facility;
- date, time, and type of incident (e.g., fire, injury);
- the extent of injuries, if any;
- an assessment of actual or potential hazards to human health or the environment, where applicable; and
- estimated quantity and disposition of recovered material that resulted from the incident.

A copy of the Incident Report form to be used is attached. Completed copies of this form will be retained in the site files.

## 7.0 CASUALTY CONTROL PLAN

Upon activation of the Casualty Control Plan (CCP), the Emergency Coordinator (EC) or his designee will:

- request emergency medical assistance from ambulance or hospital, if necessary;
- the request will typically be:
  - "This is a request for emergency medical assistance needed by Ronaldson Field Landfill and Recovery Facility, located approximately 0.8 miles west of U.S. Hwy 19 on Raft Mayer Road."
  - the nature of the emergency

- the estimate of the number, types, and conditions of the casualties
- the existence of hazardous conditions or special risks
- the name, location, and telephone number of the caller

The EC or his designee will assess the casualty situation and:

- implement the CCP and establish the Primary Casualty Aid Station at the facility;
- direct and coordinate the CCP until relieved by appropriate public officials;
- provide direction to incoming emergency medical assistance;
- provide information on number, type, condition, and location of casualties;
- maintain a log with name type of injury, and disposition of each casualty;
- direct evacuation of casualties to community medical facilities in the absence of outside emergency medical assistance;
- notify receiving medical facility and provide basic information, including assessment of emergency involved and the nature of casualty exposure;
- coordinate access to onsite medical records of employees and employee records, listing current address, home telephone, person to be notified, etc.;
- maintain contact with emergency response teams;
- answer inquiries regarding the condition and disposition of individual casualties;
- account for absence/presence of staff and contractor;
- account for employees and non-employees onsite at the time of the emergency using the sign-in/sign-out sheets or time cards; and
- provide follow-up, reporting assistance, etc., as directed.

Outside emergency support personnel (public health and safety officials, police, fire, medical, emergency response teams, etc.) will take over responsibility for execution of the CCP from the EC or his designee. First aid procedures:

- emergency first aid procedures are listed in Section 9.0 of this plan;
- casualties who can safely walk will be directed to the designated casualty aid station;
- all entrance gates are considered routes of entrance and exit for casualty assistance and disposition;
- the EC or his designee will have incoming emergency/medical assistance met and guided to the first-aid station or location of onsite emergency;

- upon arrival of trained paramedics, the control of casualty treatment and disposition will transfer to the medical service person in charge. The EC or his designee will place himself and the casualty control resources under the direction of the medical service person in charge;
- the EC or his designee will keep a log listing names, nature of injuries, disposition, and times of departure of all casualties; and
- as a contingency, all company and private vehicles onsite will be considered as possible alternate modes of transportation of casualties to nearby medical facilities.

#### Post-incident actions:

- as soon as possible after an incident involving casualties, the EC or his designee will prepare a written report on actions taken under the plan which will include the names of casualties, the disposition, and an analysis of types of injuries. This report will be retained at the site. If applicable, a report on the extent of injuries, if any, will be submitted to the Louisiana Department of Environmental Quality, and
- additional actions are as follows:
  - conduct a debriefing of persons involved in casualty control and analyze plan failures and deficiencies, and modify the Casualty Control Plan accordingly;
  - replace or repair expended or damaged supplies and equipment and ready all resources for use;
  - rehearse the Casualty Control Plan while the experience and lessons learned are still fresh in everyone's mind.

#### First aid supplies:

As a minimum, the following first aid supplies in the quantity determined by the EC will be located at the casualty aid station:

dressings	blankets
bandages	special site-specific supplies
splints	pencils and paper
medications	soap and potable water
simple instruments	flashlights and batteries
instructions and safety reference manuals	

### 8.0 FIRE CONTROL PLAN

A fire involving structures and/or equipment will be handled based on an assessment of the combustible material(s) involved. Portable fire extinguishers, located in buildings, on vehicles/equipment, or at various other locations throughout the site, may be used to control fires. Where applicable, operations should be stopped, and waste contained and collected, to ensure fire does not occur, reoccur, or spread.

Site personnel will attempt to extinguish only very small non-chemical fires. For larger fires or if there is a possibility that the fire will increase in size, assistance will be requested from the nearest fire department.

The General Manager will maintain an updated list of the physical description, location, and capabilities of all fire equipment required onsite. As a minimum, the facility will have available the types of emergency equipment specified in Section 5.0 of this plan.

## **9.0 EMERGENCY FIRST AID PROCEDURES**

Send for help. Most communities are served by experienced rescue squads or emergency units staffed with trained emergency medical technicians. As circumstances warrant, help may also be requested from local physicians or hospital emergency departments. Generally, in an emergency, the best course of action is to request help from the community emergency or rescue squad. Their communication system is usually linked to local hospitals, poison control centers, and other emergency agencies. Their transport capability is much safer than, for example, using a private vehicle to hurriedly and improperly rush a victim to a local hospital.

## INCIDENT REPORT

1. Time incident discovered: \_\_\_\_\_ Date: \_\_\_\_\_
2. Time incident contained: \_\_\_\_\_ Date: \_\_\_\_\_
3. Approximate location of incident or equipment number where incident occurred:  
\_\_\_\_\_  
\_\_\_\_\_
4. Type of incident: \_\_\_\_\_
5. Did the incident affect the environment? Yes \_\_\_\_\_ No \_\_\_\_\_  
Describe: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
6. Corrective action taken to contain release: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
7. Corrective action taken or to be taken to prevent future incidents: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
8. Department \_\_\_\_\_ Signature \_\_\_\_\_

EXHIBIT 27B

TRAINING PROGRAM

## TRAINING PROGRAM

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### 1.0 INTRODUCTION

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- 2.1.2 Health and Environment Effects
- 2.1.3 Regulatory Compliance
- 2.1.4 Facility Operation and Maintenance
- 2.1.5 Emergency Procedures Plan

#### 2.2 Continuing Training

#### 2.3 Documentation of Training



## 1.0 INTRODUCTION

The Training Program for the Ronaldson Field Landfill and Recovery Facility has been developed to provide employees with the knowledge necessary to insure safe and efficient operation of the facility. The plan also demonstrates to employees methods for rapid and effective responses to emergency situations.

## 2.0 TRAINING PROGRAM

In addition to supervised on-the-job training, all personnel handling solid waste at the Ronaldson Field Landfill and Recovery Facility will complete a program of training which will teach them to perform their duties in accordance with environmental regulations. The training program includes:

- Personal Protection and Safety
- Health and Environmental Effects
- Regulatory Compliance
- Facility Operation and Maintenance
- Contingency and Emergency Response Procedures

### 2.1 Scope of Training

#### 2.1.1 Personal Protection and Safety (Monthly Safety Meeting)

In this part of the Training Program, the facility's safety plan and procedures are reviewed. Employees are instructed in the use of protective clothing (e.g., hard hats, gloves, safety glasses, etc.) and safety equipment. The training is hands-on and emphasizes the selection, proper use, inspection and routine maintenance of all safety equipment and the limitations of this equipment. Personal hygiene and basic safety rules are emphasized.

#### 2.1.2 Health and Environment Effects (Employee Right-To-Know)

Training in health and environmental effects enables the employee to recognize potential health hazards, proper reporting and personal protection steps and to understand any potential hazards associated with material handled at the facility.

Training is broad-based and covers proper handling of wastes, effects of groundwater contamination and applicable health and environmental standards.

#### 2.1.3 Regulatory Compliance (Facility Solid Waste Permit)

Training in regulatory compliance provides a review of applicable state and local regulations with emphasis on application to the facility solid waste permit. Certified facility operators receive additional training on regulatory compliance at regularly scheduled meetings conducted by The Board of Certification and Training for Solid Waste Disposal System Operators and the LDEQ Solid Waste Division.

#### 2.1.4 Facility Operation and Maintenance

Operations and maintenance training includes an overview of all elements in the operation of the facility and detailed instruction in those elements related only to the employee's specific job function.

Operation and maintenance training is composed of the following elements:

- Detailed facility description and individual unit operations;
- Waste acceptance procedures, as described in the Permit Document;
- Landfill operation, access road maintenance, waste unloading, spreading and compacting, monthly and final covering, wet weather operations and general earth-moving activities;
- Maintenance, including inspection schedules, procedures, supplies and tools, and maintenance documentation;
- Equipment safety with particular emphasis on lock-out procedures, confined space entry, and safe emergency response to equipment failures; and
- Vehicular and mobile equipment operations, including operating, inspection, maintenance and safety procedures.

#### 2.1.5 Emergency Procedures Plan

Each employee is familiarized with the facility Emergency Procedures Plan within the first month of employment. Training in emergency procedures is provided by the facility's Emergency Coordinator or his designee, and includes:

- Description of emergency situations which might occur;
- Duties of the Emergency Coordinator and others;
- Emergency communications;
- Evacuation procedures;
- Location of emergency equipment; and
- Reporting mechanism.

A facility walk-through is given to each new employee to point out areas of potential risk, locations of emergency equipment, and any alternate routes which may be used in an evacuation. The Emergency Coordinator or his designee will document that each new employee has demonstrated his knowledge of the communication system, evacuation procedures, and location of emergency equipment.

At least one employee per shift will be trained in first aid and at least one full-time employee will be trained in cardiopulmonary resuscitation (CPR). This training is conducted by the American Red Cross, American Heart Association, YMCA, local fire department/or first aid representatives.

All operations personnel (non-clerical employees) are also trained in fire fighting. This training is conducted by the Emergency Coordinator or his designee, and includes use of cover soils to smother landfill fires, as well as use of portable extinguishers.

## 2.2 Continuing Training

Continuing training is designed to maintain proficiency in job skills, increase safety and quality consciousness, and teach new skills. Such training consists of regularly scheduled safety meetings. In addition to equipment safety, these meetings will address fire fighting practices, emergency response, and other new skills, as required.

## 2.3 Documentation of Training

All training records are maintained on site. The records contain a written description of the content of each training session, identify attendees and instructor(s), and include dates and signatures of instructor(s) and attendees documenting the training that was completed.

**EXHIBIT 18**  
**SUPPORTING DOCUMENTATION FOR**  
**AVERAGE BULK DENSITY**

## **Converting C&D Debris from Volume to Weight**

### ***A Fact Sheet for C&D Debris Facility Operators***

---

**Background:** Florida regulations require that permitted C&D facilities in the State report to the Florida Department of Environmental Protection (FDEP), by April 1 of each year, the amounts and types of wastes managed during the previous year. This requirement for C&D facilities was developed, as with the certification of recyclers program, to help determine if Counties over a population of 75,000 will meet the 30 percent waste reduction goal set forth in the law.

**Problem:** The FDEP tracks the amount of waste managed by weight (in tons). Many C&D facilities do not have scales though and only measure their waste by volume (in cubic yards).

**Solution:** A simple equation can be used to convert the volume of C&D debris (in cubic yards or  $\text{yd}^3$ ) to weight (in tons):

$$\text{Weight of C\&D Debris} = \text{Volume of C\&D Debris} \times 0.24 \text{ tons/yd}^3$$


---

#### **Example Calculation:**

A C&D disposal facility receives 100,000 cubic yards of C&D debris in one year. The number of tons of C&D debris is calculated as follows:

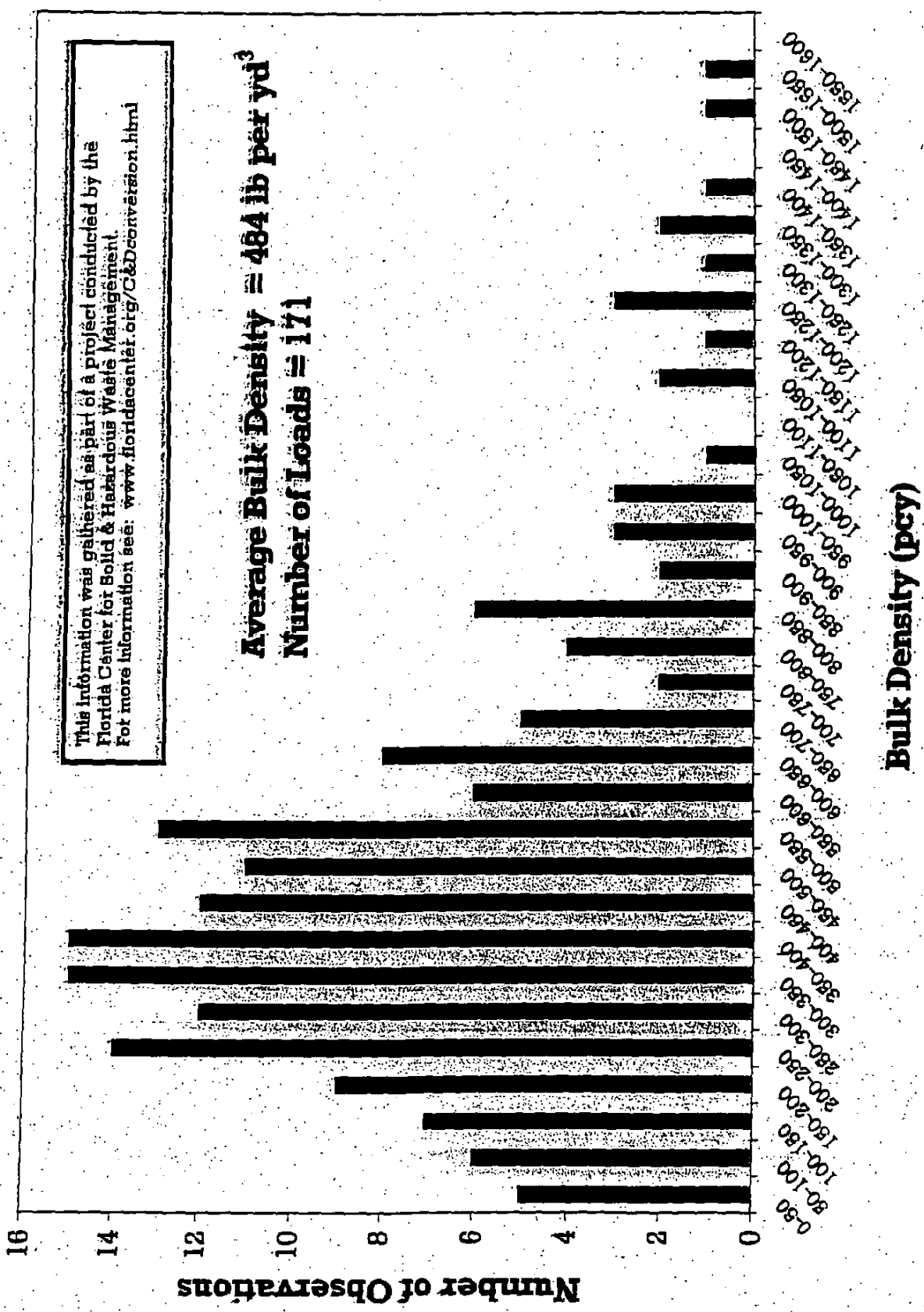
$$\text{Weight of C\&D Debris} = 100,000 \text{ yd}^3 \times 0.24 \text{ tons/yd}^3 \text{ of C\&D}$$

$$\text{Weight of C\&D Debris} = 24,000 \text{ tons}$$


---

#### **How was the conversion factor calculated?**

The conversion factor, or average bulk density, was calculated by measuring the actual weights of loads of mixed C&D from facilities in Florida and comparing those weights to the volumes of the loads. Specifically, researchers at the University of Florida measured the weights, in tons, of 171 different loads of C&D debris at 10 facilities in the State and recorded the volume, in cubic yards, of each truck or container weighed. The conversion factor was then calculated by dividing the total weight by the total volume. For mixed C&D loads in Florida, the average bulk density was measured to be 484 pounds per cubic yard or approximately 0.24 tons of C&D per cubic yard. The graph on the back shows the distribution of C&D bulk densities that were measured by the researchers.



**EXHIBIT 19**  
**EXAMPLE DAILY SOLID WASTE LOG,**  
**OUTBOUND MATERIALS LOG, AND**  
**UNKNOWN MATERIAL/HAZARDOUS WASTE LOG**

# DAILY SOLID WASTE LOG\*

## FOR

### RONALDSON FIELD

Date: \_\_\_\_\_ Weather Conditions: \_\_\_\_\_

TRUCK NUMBER AND SOLID WASTE I.D. N.O.	GENERAL CONTENT OF THE LOAD	AMOUNT OF SOLID WASTE ON TRUCK (1/4 FULL, 1/2 Full, Full, Etc.)
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		

Total Number of Trucks: \_\_\_\_\_

Total Amount of Solid Waste on Trucks<sup>\*\*\*</sup>: \_\_\_\_\_ (Loads)<sup>\*\*\*</sup>

Comments:

\_\_\_\_\_  
Landfill Manager

- \* Each truck and its contents to be recorded every time a load or partial load enters the Landfill site
- \*\* Each full truck equals one (1) load
- \*\*\* Amount to be entered into formula to determine quantity (wet-weight tonnage)



TRUCK NUMBER AND INVOICE NUMBER	GENERAL CONTENT OF THE LOAD	AMOUNT OF MATERIAL ON THE LOAD IN TONS OR CUBIC YARDS
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		
21.		
22.		
23.		
24.		
25.		

TOTAL NUMBER OF CUBIC YARDS: \_\_\_\_\_



**EXHIBIT 20**  
**WATER DISCHARGE PERMIT LA 0102687**



PERMIT NUMBER  
LA0102687

OFFICE OF WATER RESOURCES  
**Water Discharge Permit**

Pursuant to the Clean Water Act, as amended, (33 U.S.C. 1251 et seq.) and Louisiana Environmental Quality Act, as amended, (La. R.S. 30:2001 et seq.) Rules and Regulations effective or promulgated under the authority of said Acts, and in reliance on statements and representations heretofore made in the application, a Louisiana Pollutant Discharge Elimination System permit is issued authorizing

Natural Resources Recovery, Inc.  
Ronaldson Field Facility  
Post Office Box 1065  
Baton Rouge, Louisiana 70821

**Type Facility:** construction and demolition debris landfill and materials recovery and reuse facility

**Location:** one mile east of Scenic Highway on Rafe Mayer Road, Alsen  
East Baton Rouge Parish

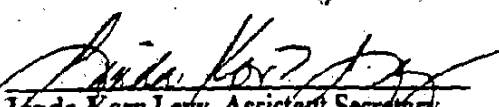
**Receiving Waters:** unnamed ditch, thence to Cypress Bayou, thence to the Corne River

to discharge in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, and III attached hereto.

This permit is effective on the date of issuance.

This permit and the authorization to discharge shall expire five (5) years from the date of issuance.

Issued this the 20<sup>th</sup> day of January, 1998

  
Linda Korn Levy, Assistant Secretary  
Office of Water Resources

PART II

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Permit No. LA0102687

**EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

During the period beginning the effective date and lasting through the construction of the first landfill cell prior to deposition of waste <sup>†</sup> the permittee is authorized to discharge from:

Outfall 001, the discharge of accumulated stormwater and groundwater in the existing borrow pit.

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic		Discharge Limitations				Monitoring Requirements	
		Other Units				Measurement Frequency(*1)	Sample Type
		((lbs/day, UNLESS STATED))		(mg/L, UNLESS STATED)			
	STORET Code	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum		
Flow-MGD	50050	---	---	Report	Report	1/discharge	Estimate
TOC	00680	---	---	---	30	1/discharge	Grab
Oil and Grease	00556	---	---	---	15	1/discharge	Grab
Lead, Total	01051	---	---	---	0.15	1/discharge	Grab
Mercury, Total	71900	---	---	---	0.01	1/discharge	Grab
Copper, Total	01042	---	---	---	0.5	1/discharge	Grab
Zinc, Total	01092	---	---	---	1.0	1/discharge	Grab
pH-Minimum/Maximum Values (Standard Units)	00400	---	---	6.0 (*2) (Min)	9.0 (*2) (Max)	1/discharge	Grab

<sup>†</sup> See Part II, Paragraph A

There shall be no discharge of floating solids or visible foam in other than trace amounts.

The pit dewatering activities shall be conducted in such a manner so as to avoid nuisance conditions (i.e., conditions leading to erosion or excessive solids or turbidity).

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):  
Outfall 001, at the point of discharge from the clay mining pit, prior to combining with other waters.

**FOOTNOTES:**

(\*1) The above parameters shall be monitored once per discharge. If the discharge continues for more than one week, the monitoring frequency shall be once per week. Additional dewatering during the construction of the landfill and final Outfall 001 shall be monitored for the above parameters.

(\*2) The permittee shall report on the Discharge Monitoring Reports both the minimum and maximum instantaneous pH values measured (rather than the monthly average and daily maximum as shown above).

PART 3

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Permit No. LAD102687

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

During the period beginning after completing construction of the first landfill cell upon deposition of waste and lasting through the expiration date†, the permittee is authorized to discharge from:

Outfall 001, the discharge of stormwater runoff, landfill dewatering, and stormwater runoff from the recyclable materials stockpiles from the southeast section of the Phase 1, 2 and 3 fill areas (estimated flow is 0.188 MGD).

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	STORET Code	Discharge Limitations				Monitoring Requirements	
		((lbs/day, UNLESS STATED) (mg/L, UNLESS STATED))				Measurement Frequency(*1)	Sample Type
		Monthly Average	Daily Maximum	Monthly Average	Daily Maximum		
Flow-MGD	30050	---	---	Report	Report	1/month	Estimate
TOC	00680	---	---	---	50	1/month	Grab
Oil & Grease	00556	---	---	---	15	1/month	Grab
Visible/Sheen	084066	---	---	---	no presence	1/day	Observation
Lead, Total	01051	---	---	---	0.15	2/year	Grab
Mercury, Total	71900	---	---	---	0.01	2/year	Grab
Copper, Total	01042	---	---	---	0.3	2/year	Grab
Zinc, Total	01092	---	---	---	1.0	2/year	Grab
pH-Minimum/Maximum Values (Standard Units)	00400	---	---	6.0 (*2) (Min)	9.0 (*2) (Max)	1/month	Grab

† See Part II, Paragraph K

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):  
Outfall 001, at the point of discharge from the Phase 1, 2 and 3 fill areas prior to combining with other waters.

FOOTNOTES:

(\*1) When discharging.

(\*2) The permittee shall report on the Discharge Monitoring Reports both the minimum and maximum instantaneous pH values measured (rather than the monthly average and daily maximum as shown above).

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Permit No.  
LA0102687

## PART II

### OTHER REQUIREMENTS

In addition to the standard conditions required in all permits and listed in Part III, the Office has established the following additional requirements in accordance with the Louisiana Water Quality Regulations.

- A. The Department of Environmental Quality reserves the right to impose more stringent discharge limitations or additional restrictions, if necessary, to maintain the water quality integrity and the designated uses of the receiving water bodies.
- B. This permit does not in any way authorize the Permittee to discharge a pollutant not listed or quantified in the application or limited or monitored for in the permit.
- C. Authorization to discharge pursuant to the conditions of this permit does not relieve the Permittee of any liability for damages to state waters or private property. For discharges to private land, this permit does not relieve the permittee from obtaining approval from the landowner for appropriate easements and rights of way.
- D. For definitions of monitoring and sampling terminology see Part III, Section F.

#### E. FLOW MEASUREMENT "ESTIMATE" SAMPLE TYPE

If the flow measurement sample type in Part I is specified as "estimate", flow measurements shall not be subject to the accuracy provisions established at Part III.C.2 of this permit. The daily flow value may be estimated using best engineering judgement.

#### F. STORMWATER DISCHARGED OTHER THAN THROUGH PERMITTED OUTFALLS

Any runoff leaving developed areas of the facility, other than through the permitted outfalls, exceeding 50 mg/l TOC, 15 mg/l Oil and Grease, or having a pH less than 6.0 or greater than 9.0 standard units shall be a violation of this permit. All stormwater coming in contact with any materials culled for recovery or reuse must comply with these conditions.

#### G. OIL AND GREASE TEST PROCEDURE METHOD 1664

Method 1664 [Federal Register, Vol. 62, No. 80, April 25, 1997, page 22342] shall replace Methods 413.1 and 5520B as the approved oil and grease test procedure for permit compliance monitoring purposes.

#### H. PERMIT REOPENER CLAUSE

The permittee is required to submit the applicable quantitative data listed in LAC 33:IX.2341.C.1.a.v, except the data previously submitted on monthly discharge monitoring reports, no later than two years after the commencement of discharge from the proposed facility as per LAC 33:IX.2341.C.1.a.vi. Upon reviewing this data, LDEQ may choose to modify, or alternatively revoke and reissue this permit to change effluent limitations based on the actual reported flow or concentration of pollutants in the discharge. Additionally, the permit may be reopened to incorporate the results of any approved total maximum daily load allocation for the receiving waterbody.

- I. Residential, commercial, or industrial waste must not be disposed of at this facility as per LAC 33:VII.115. The receipt of hazardous waste shall be strictly prohibited and prevented at this facility as per LAC 33:VII.721.C.1.

Part II

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Permit No.

LA0102687

**(OTHER REQUIREMENTS (continued))**

- J. Levee walls must be engineered to withstand a 100-year flood event and sustain adequate freeboard as per LAC 33:VII.721.A.3.a. Additionally, enough freeboard must be maintained inside the landfill to prevent overflow during a 25-year, 24-hour precipitation event.

**K. 25-YEAR, 24-HOUR PRECIPITATION EVENT**

The term "25-year, 24-hour precipitation event" means the maximum 24-hour precipitation event with the probable recurrence interval of once in twenty-five years as defined by the National Weather Service and Technical Paper No. 40, "Rainfall Frequency Atlas of the U.S.", May, 1961, or equivalent regional or rainfall probability information developed therefrom.

**L. CHANGE IN STATUS**

Prior written authorization from the Office of Water Resources is required to discharge wastewater from the facility if the landfill contents become more than five (5) percent by volume of paper associated with construction and/or demolition projects or any other type of solid waste (excluding wood waste or yard waste). Written authorization is also required to discharge wastewater if the Solid Waste Division deems it necessary to reclassify the site as other than construction/demolition debris.

- M. The permittee shall achieve compliance with the effluent limitations and monitoring requirements specified for discharges in accordance with the following schedule:

Outfall 001, existing borrow pit dewatering, Part I, Page 2 of 3: Compliance shall be achieved by the effective date of the permit and last through the construction of the first landfill cell, prior to deposition of waste.

Outfall 001, stormwater from Phase 1, 2 and 3 fill areas, Part I, Page 3 of 3: Compliance shall be achieved after completing construction of the first landfill cell in Phase 1, 2 or 3, prior to deposition of waste and last through the expiration date of the permit.

The permittee shall notify this office in writing 30 days prior to discharging from Outfall 001 (Part I, Page 3 of 3).

**N. 24-HOUR ORAL REPORTING: DAILY MAXIMUM LIMITATION VIOLATIONS**

Under the provisions of Part III.D.6.b.(3) of this permit, violations of daily maximum limitations for the following pollutants shall be reported orally to the Office of Water Resources within 24 hours from the time the permittee became aware of the violation followed by a written report in five days.

Pollutants:

Lead  
Mercury  
Copper  
Zinc

**O. STORMWATER POLLUTION PREVENTION PLAN (SWP3)**

The permittee shall prepare, implement, and maintain a Storm Water Pollution Prevention Plan (SWP3) within six (6) months of the effective date of this permit as described in EPA document 832-R-92-006



Part II

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**OTHER REQUIREMENTS (continued)**

(Storm Water Management for Industrial Activities). This document may be obtained by writing to the U.S. Environmental Protection Agency, Office of Water Resources Center (WH-556), 401 M Street, S.W., Washington D.C. 20460 or by calling (202) 260-7786. The plan shall be submitted upon request to the Office of Water Resources. The terms and conditions of the SWP3 shall be an enforceable part of this permit. The following conditions shall be addressed in the SWP3 in addition to any other conditions developed by the permittee:

1. The plan shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges associated with industrial activity from the facility. In addition, the plan shall describe and ensure the implementation of practices which are to be used to reduce the pollutants in stormwater discharges associated with industrial activity at the facility and to assure compliance with the terms and conditions of this permit.
2. All diked areas surrounding storage tanks or stormwater collection basins shall be free of residual oil or other contaminants so as to prevent the accidental discharge of these materials in the event of flooding, dike failure, or improper draining of the diked area. All drains from diked areas shall be equipped with valves which shall be kept in the closed condition except during periods of supervised discharge.
3. All check valves, tanks, drains, or other potential sources of pollutant releases shall be inspected and maintained on a regular basis to assure their proper operation and to prevent the discharge of pollutants.
4. All equipment, parts, dumpsters, trash bins, petroleum products, chemical solvents, detergents, or other materials exposed to stormwater shall be maintained in a manner which prevents contamination of stormwater by pollutants.
5. All storage tank installations (with a capacity greater than 660 gallons for an individual container, or 1,320 gallons for two or more containers in aggregate within a common storage area) shall be constructed so that a secondary means of containment is provided for the entire contents of the largest tank plus sufficient freeboard to allow for precipitation. Diked areas should be sufficiently impervious to contain spills.
6. Periodically inspect stockpiles of recyclable materials exposed to stormwater, for evidence of erosion or channelization from stormwater that would create a source of suspended solids that could potentially degrade the water quality of the receiving stream. If such evidence is detected or the TSS value for any sample exceeds 70 mg/l, pollution prevention practices (i.e. mulching, matting, netting, straw bale barrier, gravel or stone filter berm, etc.) shall be immediately initiated to eliminate any degradation to water quality. If channelization occurs so as to create additional outfalls, the permittee shall immediately request a modification to this permit to add these additional outfalls.
7. The SWP3 plan may reflect requirements for Spill Prevention and Control (SPC) plans under LAC 33:IX, Chapter 9, and may incorporate any part of such plans into the SWP3 plan by reference.

**Q. 40 CFR PART 136 (Sec LAC 33:IX.2531) ANALYTICAL REQUIREMENTS**

Unless otherwise specified in this permit, monitoring shall be conducted according to analytical, apparatus and materials, sample collection, preservation, handling, etc., procedures listed at 40 CFR Part 136, and in particular, Appendices A, B, and C (Sec LAC 33:IX.2531).

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OTHER REQUIREMENTS (continued)R. DISCHARGE MONITORING REPORTS

Monitoring results must be reported on a Discharge Monitoring Report (DMR) form (EPA No. 3320-1 or an approved substitute). All monitoring reports must be retained for a period of at least three (3) years from the date of the sample measurement. The permittee shall make available to this Office, upon request, copies of all monitoring data required by this permit.

If there is a no discharge event at any of the monitored outfall(s) during the sampling period, enter "NO DISCHARGE" in the upper right corner of the Discharge Monitoring Report.

Monitoring results for each month shall be summarized on a Discharge Monitoring Report (DMR) Form (one DMR Form per month) and submitted to this Office on a quarterly basis or as per established practice. The schedule for quarterly DMR submission is as follows:

Monitoring PeriodDMR Due Date

January, February, March

April 28th

April, May, June

July 28th

July, August, September

October 28th

October, November, December

January 28th

Duplicate copies of DMR's signed and certified as required by LAC 33:IX.2333.B, and all other reports required by this Office shall be submitted to the Office of Water Resources, and the appropriate DEQ regional office at the following addresses:

Department of Environmental Quality  
Office of Water Resources  
Post Office Box 82215  
Baton Rouge, Louisiana 70884-2215  
Attn: Permit Compliance Unit

Capital Regional Office  
Water Quality Management Division  
5222 Summa Court  
Baton Rouge, Louisiana 70809

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**PART III**  
**STANDARD CONDITIONS FOR LPDES PERMITS**

**SECTION A. GENERAL CONDITIONS****1. Introduction**

In accordance with the provisions of LAC 33:IX.2355, et. seq., this permit incorporates either expressly or by reference ALL conditions and requirements applicable to Louisiana Pollutant Discharge Elimination System Permits (LPDES) set forth in the Louisiana Environmental Quality Act, as amended, as well as ALL applicable regulations.

**2. Duty to Comply**

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and the Louisiana Environmental Quality Act and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification, or for denial of a permit renewal application.

**3. Penalties for Violation of Permit Conditions**

a. LA. R. S. 30:2025 provides for civil penalties for violations of these regulations and the Louisiana Environmental Quality Act. LA. R. S. 30:2076.2 provides for criminal penalties for violation of any provisions of the LPDES or any order or any permit condition or limitation issued under or implementing any provisions of the LPDES program. (See Section E. Penalties for Violation of Permit Conditions for additional details).

b. Any person may be assessed a civil penalty by the State Administrative Authority under LA. R. S. 30:2025 for violating a permit condition or limitation implementing any of the requirements of the LPDES program in a permit issued under the regulations or the Louisiana Environmental Quality Act.

**4. Toxic Pollutants**

a. Other effluent limitations and standards under sections 301, 302, 303, 307, 318, and 405 of the Clean Water Act. If any applicable toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under Section 307(a) of the Clean Water Act for a toxic pollutant and that standard or prohibition is more stringent than any limitation on the pollutant. In this permit, the state administrative authority shall institute proceedings under these regulations to modify or revoke and reissue the permit to conform to the toxic effluent standard or prohibition.

b. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Clean Water Act within the time provided in the regulations that establish these standards or prohibitions, or standards for sewage sludge use or disposal even if the permit has not yet been modified to incorporate the requirement.

**5. Duty to Reapply**

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. The application shall be submitted at least 180 days before the expiration date of this permit. The state administrative authority may grant permission to submit an application later than 180 days in advance but no later than the permit expiration date. Continuation of expiring permits shall be governed by regulations promulgated at LAC 33:IX.2321 and any subsequent amendments.

**6. Permit Action**

This permit may be modified, revoked and reissued, or terminated for cause in accordance with LAC 33:IX.2383, 2385, 2387, 2407 and 2769. The causes may include, but are not limited to, the following:

a. Noncompliance by the permittee with any condition of the permit;

b. The permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the permittee's misrepresentation of any relevant facts at any time;

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- c. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination;
- d. A change in any condition that requires either a temporary or a permanent reduction or elimination of any discharge; or
- e. Failure to pay applicable fees under the provisions of LAC 33:IX, Chapter 13.

The filing of a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

#### 7. Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

#### 8. Duty to Provide Information

The permittee shall furnish to the state administrative authority, within a reasonable time, any information which the administrative authority may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the state administrative authority, upon request, copies of records required to be kept by this permit.

#### 9. Criminal and Civil Liability

Except as provided in permit conditions on "Bypassing" and "Upsets", nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Any false or materially misleading representation or concealment of information required to be reported by the provisions of the permit, the Act, or applicable regulations, which avoids or effectively defeats the regulatory purpose of the Permit may subject the Permittee to criminal enforcement pursuant to La. R.S. 30:2025.

#### 10. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Clean Water Act.

#### 11. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Clean Water Act.

#### 12. Severability

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

#### 13. Dilution

A permittee shall not achieve any effluent concentration by dilution unless specifically authorized in the permit. A permittee shall not increase the use of process water or cooling water or otherwise attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve permit limitations or water quality.

### SECTION B. PROPER OPERATION AND MAINTENANCE

#### 1. Need to Halt or Reduce not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

**2. Duty to Mitigate**

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

The permittee shall also take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with the permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

**3. Proper Operation and Maintenance**

a. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

b. The permittee shall provide an adequate operating staff which is duly qualified to carry out operation, maintenance and other functions necessary to ensure compliance with the conditions of this permit.

**4. Bypass of Treatment Facilities**

a. Bypass - the intentional diversion of waste streams from any portion of a treatment facility.

b. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Parts III.B.4.c. and 4.d.

c. Notice

(1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.

(2) Unanticipated bypass. The permittee shall, within 24 hours, submit notice of an unanticipated bypass as required in Part III.D.6.

d. Prohibition of bypass

(1) Bypass is prohibited, and the state administrative authority may take enforcement action against a permittee for bypass, unless:

(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and,

(c) The permittee submitted notices as required by Part III.B.4.c.

(2) The state administrative authority may approve an anticipated bypass after considering its adverse effects, if the state administrative authority determines that it will meet the three conditions listed in Part III.B.4.d(1).

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**5. Upset Conditions**

- a. Upset—an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Part III.B.5.c. are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance is final, administrative action subject to judicial review.
- c. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
  - (1) An upset occurred and that the permittee can identify the cause(s) of the upset;
  - (2) The permitted facility was at the time being properly operated;
  - (3) The permittee submitted notice of the upset as required by Part III.D.5.c.(2); and,
  - (4) The permittee complied with any remedial measures required by Part III.B.2.
- d. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

**6. Removed Substances**

Solids, sewage sludges, filter backwash, or other pollutants removed in the course of treatment or wastewater control shall be disposed of in a manner such as to prevent any pollutant from such materials from entering waters of the state.

**7. Percent Removal**

For publicly owned treatment works, the 30-day average percent removal for Biochemical Oxygen Demand and Total Suspended Solids shall not be less than 85 percent in accordance with LAC 33:IX.2645.A.3. and B.3, and LAC 33:IX.2647.B.

**SECTION C. MONITORING AND RECORDS****1. Inspection and Entry**

The permittee shall allow the state administrative authority, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon the presentation of credentials and other documents as may be required by the law to:

- a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit. Most inspections will be unannounced and should be allowed to begin immediately, but in no case shall begin more than thirty (30) minutes after the time the inspector presents his/her credentials and announces the purpose(s) of the inspection. Delay in excess of thirty (30) minutes shall constitute a violation of these regulations. However, additional time can be granted if the inspector or the Administrative Authority determines that the circumstances warrant such action.
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit. For records maintained in either a central or private office that is open only during normal office hours and is closed at the time of inspection, the records shall be made available as soon as the office is open, but

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In no case later than the close of business the next working day;

- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit; and
- d. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the Clean Water Act or the Louisiana Environmental Quality Act, any substances or parameters at any location.

e. Sample Collection

- (1) When the inspector announces that samples will be collected, the permittee will be given an additional thirty (30) minutes to prepare containers in order to collect duplicates. If the permittee cannot obtain and prepare sample containers within this time, he is considered to have waived his right to collect duplicate samples and the sampling will proceed immediately. Further delay on the part of the permittee in allowing initiation of the sampling will constitute a violation of these regulations.
- (2) At the discretion of the administrative authority, sample collection shall proceed immediately (without the additional 30 minutes described in Part III.C.e.1. above) and the inspector shall supply the permittee with a duplicate sample.
- f. It shall be the responsibility of the permittee to ensure that a facility representative familiar with provision of its wastewater discharge permit, including any other conditions or limitations, be available either by phone or in person at the facility during all hours of operation. The absence of such personnel on-site who are familiar with the permit shall not be grounds for delaying the initiation of an inspection except in situations as described in Part III.C.1.b. The permittee shall be responsible for providing witnesses/escorts during inspections. Inspectors shall abide by all company safety rules and shall be equipped with standard safety equipment (hard hat, safety shoes, safety glasses) normally required by industrial facilities.
- g. Upon written request copies of field notes, drawings, etc., taken by office personnel during an inspection shall be provided to the permittee after the final inspection report has been completed.

2. Representative Sampling

Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. All samples shall be taken at the outfall location(s) indicated in the permit. The state administrative authority shall be notified prior to any changes in the outfall location(s). Any changes in the outfall location(s) will be subject to modification, revocation and reissuance in accordance with LAC 33:IX.2383.

3. Retention of Records

Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR 503), The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the state administrative authority at any time.

4. Record Contents

Records of monitoring information shall include:

- a. The date, exact place, and time of sampling or measurements;
- b. The individual(s) who performed the sampling or measurements;
- c. The date(s) analyses were performed;
- d. The time(s) analyses were begun;

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- e. The individual(s) who performed the analyses;
- f. The analytical techniques or methods used;
- g. The results of such analyses; and
- h. The results of all Quality Control Procedures.

#### 5. Monitoring Procedures

- a. Monitoring results must be conducted according to test procedures approved under 40 CFR Part 136 (See LAC 33:IX.2531), unless other test procedures have been specified in this permit. This includes procedures contained in the latest EPA approved edition of the following publications:

(1) "Standard Methods for the Examination of Water and Waste Water". This publication is available from the American Public Health Association, Publication Sales, P. O. Box 753, Waldorf, MD 20604-0573, Phone number (301) 893-1894, Fax number (301) 843-0159.

(2) "Annual Book of Standards, Vols 1101-1103, Water I, Water II, and Atmospheric Analysis". This publication is available from the American Society for Testing Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, Phone number (610) 832-9500.

(3) "Methods for Chemical Analysis of Water and Wastes, Revised, March 1983," U.S. Environmental Protection Agency, Analytical Quality Control Laboratory, Cincinnati, Ohio. This publication is available from the National Technical Information Service (NTIS), Springfield, VA 22161, Phone number (800) 553-6847. Order by NTIS publication number PB-84-128677.

- b. The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instruments at intervals frequent enough to insure accuracy of measurements and shall maintain appropriate records of such activities.

- c. An adequate analytical quality control program, including the analyses of sufficient standards, spikes, and duplicate samples to insure the accuracy of all required analytical results shall be maintained by the permittee or designated commercial laboratory. General sampling protocol shall follow guidelines established in the "Handbook for Sampling and Sample Preservation of Water and Wastewater, 1982" U.S. Environmental Protection Agency. This publication is available from the National Technical Information Service (NTIS), Springfield, VA 22161, Phone number (800) 553-6847. Order by NTIS publication number PB-83-124503. General laboratory procedures including glassware cleaning, etc. can be found in the "Handbook for Analytical Quality Control in Water and Wastewater Laboratories, 1979," U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory. This publication is available from the Environmental Protection Agency, Phone number (513) 569-7562. Order by EPA publication number EPA-600/4-79-019.

#### 6. Flow Measurements

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to insure that the accuracy of the measurements are consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than 10% from true discharge rates throughout the range of expected discharge volumes. Guidance in selection, installation, calibration and operation of acceptable flow measurement devices can be obtained from the following references:

- a. "A Guide to Methods and Standards for the Measurement of Water Flow, 1975," U.S. Department of Commerce, National Bureau of Standards. This publication is available from the National Technical Information Service (NTIS), Springfield, VA 22161, phone number (800) 553-6847. Order by NTIS publication number COM-75-10683.



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- b. "Flow Measurement in Open Channels and Closed Conduits, Volumes 1 and 2," U.S. Department of Commerce, National Bureau of Standards. This publication is available from the National Technical Service (NTIS), Springfield, VA, 22161, Phone number (800) 553-6847. Order by NTIS publication number PB-273 535.
- c. "NPDES Compliance Flow Measurement Manual," U.S. Environmental Protection Agency, Office of Water Enforcement. This publication is available from the National Technical Information Service (NTIS), Springfield, VA, 22161, Phone number (800) 553-6847. Order by NTIS publication number PB-82-131178.
- 7. Prohibition for Tampering Penalties
  - a. No person shall falsify, tamper with, or knowingly render inaccurate, any monitoring device or method required to be maintained under this permit.
  - b. Any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method to be maintained under this permit shall, upon conviction, be subject to penalties in accordance with the state statutes LA R. S. 30:2076.2.
- 8. Additional Monitoring by the Permittee  
If the Permittee monitors any pollutant more frequently than required by the permit, using test procedures approved under 40 CFR Part 136 (See LAC 33:IX.2531), or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the state administrative authority.
- 9. Averaging of Measurements  
Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the state administrative authority in the permit.

#### SECTION D. REPORTING REQUIREMENTS

- 1. Facility Changes  
The permittee shall give notice to the state administrative authority as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:
  - a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or
  - b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under LAC 33:IX.2357.A.1.
  - c. For Municipal Permits. Any change in the facility discharge (including the introduction of any new source or significant discharge or significant changes in the quantity or quality of existing discharges or pollutants) must be reported to the permitting authority. In no case are any new connections, increased flows, or significant changes in influent quality permitted that will cause violation of the effluent limitations specified herein.
- 2. Anticipated Noncompliance  
The permittee shall give advance notice to the state administrative authority of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- 3. Transfers  
This permit is not transferable to any person except after notice to the state administrative authority. The state administrative authority may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act or the

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Louisiana Environmental Quality Act. (See LAC 33:IX.2381; in some cases, modification or revocation and reissuance is mandatory.)

a. **Transfers by modification.** Except as provided in LAC 33:IX.2381.B, a permit may be transferred by the permittee to a new owner or operator only if the permit has been modified or revoked and reissued (under LAC 33:IX.2383.B.2), or a minor modification made (under LAC 33:IX.2385) to identify the new permittee and incorporate such other requirements as may be necessary under the Clean Water Act and the Louisiana Environmental Quality Act.

b. **Automatic transfers.** As an alternative to transfers under LAC 33:IX.2381.A, any LPDES permit may be automatically transferred to a new permittee if:

- (1) The current permittee notifies the administrative authority at least 30 days in advance of the proposed transfer date in Part III.D.3.b.(2) below;
- (2) The notice includes a written agreement between the existing and new permittee(s) containing a specific date for transfer of permit responsibility, coverage, and liability between them; and
- (3) The state administrative authority does not notify the existing permittee and the proposed new permittee of his or her intent to modify or revoke and reissue the permit. A modification under this subsection may also be a minor modification under LAC 33:IX.2385. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in Part III.D.3.b.(2).

4. Monitoring Reports

Monitoring results shall be reported at the intervals and in the form specified in Part II.

5. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

6. Requirements for Notification

a. Emergency Notification

The permittee shall report any noncompliance which may endanger health or the environment. As required by LAC 33:IX.3915, in the event of an unauthorized discharge that does cause an emergency condition, the discharger shall notify the hotline by telephone at (504) 925-6595 (collect calls accepted 24 hours a day) immediately (a reasonable period of time after taking prompt measures to determine the nature, quantity, and potential off-site impact of a release, considering the exigency of the circumstances), but in no case later than one hour after learning of the discharge. (An emergency condition is any condition which could reasonably be expected to endanger the health, safety of the public, cause significant adverse impact to the land, water, or air environment, or cause severe damage to property.) Notification required by this section will be made regardless of the amount of discharge. A written submission shall be provided within 5 days of the time the permittee becomes aware of the circumstances. The report shall contain the following information:

- (1) A description of the noncompliance and its cause;
- (2) The period of noncompliance including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and
- (3) Steps being taken to reduce, eliminate, and prevent recurrence of the noncomplying discharge.

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**b. Prompt Notification**

- (1) As required by LAC 33:IX.3917, in the event of an unauthorized discharge which does not cause an emergency condition, the discharger shall notify the Water Quality Management Division by telephone within 24 hours after learning of the discharge at (504) 765-0634. Notification should be made between the hours of 8 a.m. and 4:30 p.m. on working days.
- (2) In the event the division is unable for any reason(s) to receive the notification required in this section, the discharger shall notify the department at (504) 342-1234 within 24 hours after learning of the discharge.
- (3) Any of the unauthorized discharges listed below, which do not cause an emergency condition must be reported within 24 hours after learning of the discharge and must contain the information listed in 6.a. of this section. A written submission shall be provided within 5 days of the time the permittee becomes aware of the circumstances.
  - (a) Any unanticipated bypass which exceeds any effluent limitation in the permit (see LAC 33:IX.2355.M.3.b.);
  - (b) Any upset which exceeds any effluent limitation in the permit;
  - (c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the administrative authority in Part II of the permit to be reported within 24 hours (LAC 33:IX.2361.G.); and
  - (d) Any discharge containing a pollutant in a quantity which exceeds any reportable quantity specified in the "Notification Regulations and Procedures for Unauthorized Discharges", (LAC 33:IX Subchapter E), unless specifically authorized in this permit.

- c. The state administrative authority may waive the written report required in 6.b.(3).(a), (b), and (c) above, on a case-by-case basis if the oral report has been received within 24 hours.

**7. Other Noncompliance**

The permittee shall report all instances of noncompliance not reported under Part III.D.4., 5., and 6., at the time monitoring reports are submitted. The reports shall contain the information listed in Part III.D.6.a.

**8. Other Information**

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the state administrative authority, it shall promptly submit such facts or information.

**9. Discharges of Toxic Substances**

In addition to the reporting requirements under Part III.D.1-8, all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the state administrative authority as soon as they know or have reason to believe:

- a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant:
  - L listed at Chapter 23, Appendix D, Tables II and III (excluding Total Phenols) which is not limited in the permit, if that discharge will exceed the highest of the following notification levels:
    - (1) One hundred micrograms per liter (100 µg/L);
    - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4 -dinitro-phenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
    - (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application

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In accordance with LAC 33:IX.2331.G.7; or

(4) The level established by the state administrative authority in accordance with LAC 33:IX.2361.F.; or

ii. which exceeds the reportable quantity levels for pollutants at LAC 33:I. Subchapter E.

b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant:

i. listed at Chapter 23, Appendix D, Tables II and III (excluding Total Phenols) which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(1) Five hundred micrograms per liter (500 µg/L);

(2) One milligram per liter (1 mg/L) for antimony;

(3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with LAC 33:IX.2331.G.7; or

(4) The level established by the state administrative authority in accordance with LAC 33:IX.2361.F.; or

ii. which exceeds the reportable quantity levels for pollutants at LAC 33:I. Subchapter E.

#### 10. Signatory Requirements

All applications, reports, or information submitted to the Office of Water Resources shall be signed and certified.

a. All permit applications shall be signed as follows:

(1) For a corporation - by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

(a) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation; or

(b) The manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

**NOTE:** DEQ does not require specific assignments or delegations of authority to responsible corporate officers identified in Part III.D.10.a.(1)(a). The agency will presume that these responsible corporate officers have the requisite authority to sign permit applications unless the corporation has notified the state administrative authority to the contrary. Corporate procedures governing authority to sign permit applications may provide for assignment or delegation to applicable corporate positions under Part III.D.10.a.(1)(b), rather than to specific individuals.

(2) For a partnership or sole proprietorship - by a general partner or the proprietor, respectively; or

(3) For a municipality, state, federal, or other public agency - by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a federal agency includes:

(a) The chief executive officer of the agency, or

(b) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

b. All reports required by permits and other information requested by the state administrative authority shall be

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signed by a person described in Part III.D.10.a., or by a duly authorized representative of that person. A person is a duly authorized representative only if:

- (1) The authorization is made in writing by a person described in Part III.D.10.a.;
- (2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company, (a duly authorized representative may thus be either a named individual or an individual occupying a named position; and,
- (3) The written authorization is submitted to the state administrative authority.

c. Changes to authorization. If an authorization under Part III.D.10.b. is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Part III.D.10.b. must be submitted to the state administrative authority prior to or together with any reports, information, or applications to be signed by an authorized representative.

d. Certification. Any person signing a document under Part III.D.10. a. or b. section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

#### 11. Availability of Reports

All recorded information (completed permit application forms, fact sheets, draft permits, or any public document) not classified as confidential information under R.S. 30:2030(A) and 30:2074(D) and designated as such in accordance with these regulations (LAC 33:IX.2323 and LAC 33:IX.2763) shall be made available to the public for inspection and copying during normal working hours in accordance with the Public Records Act, R.S. 44:1 et seq.

Claims of confidentiality for the following will be denied:

- a. The name and address of any permit applicant or permittee;
- b. Permit applications, permits, and effluent data.
- c. Information required by LPDES application forms provided by the state administrative authority under LAC 33:IX.2331 may not be claimed confidential. This includes information submitted on the forms themselves and any attachments used to supply information required by the forms.

### SECTION E. PENALTIES FOR VIOLATIONS OF PERMIT CONDITION

#### 1. Criminal

##### a. Negligent Violations

The Louisiana Revised Statutes LA. R. S. 30:2076.2 provides that any person who negligently violates any provision of the LPDES, or any order issued by the secretary under the LPDES, or any permit condition or limitation implementing any such provision in a permit issued under the LPDES by the secretary, or any requirement imposed in a pretreatment program approved under the LPDES is subject to a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than 1 year, or both. If a conviction of a person is for a violation committed after a first conviction of such person, he shall be subject to a fine of not more than \$50,000 per day of violation, or imprisonment of not more than two years, or both.

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b. Knowing Violations

The Louisiana Revised Statutes LA. R. S. 30:2076.2 provides that any person who knowingly violates any provision of the LPDES, or any permit condition or limitation implementing any such provisions in a permit issued under the LPDES, or any requirement imposed in a pretreatment program approved under the LPDES is subject to a fine of not less than \$5,000 nor more than \$50,000 per day of violation, or imprisonment for not more than 3 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person, he shall be subject to a fine of not more than \$100,000 per day of violation, or imprisonment of not more than six years, or both.

c. Knowing Endangerment

The Louisiana Revised Statutes LA. R. S. 30:2076.2 provides that any person who knowingly violates any provision of the LPDES, or any order issued by the secretary under the LPDES, or any permit condition or limitation implementing any such provisions in a permit issued under the LPDES by the secretary, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000, or by imprisonment for not more than 15 years, or both. A person which is an organization shall, upon conviction of violating this Paragraph, be subject to a fine of not more than one million dollars. If a conviction of a person is for a violation committed after a first conviction of such person under this Paragraph, the maximum punishment shall be doubled with respect to both fine and imprisonment.

d. False Statements

The Louisiana Revised Statutes LA. R. S. 30:2076.2 provides that any person who knowingly makes any false material statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under the LPDES or who knowingly falsifies, tampers with, or renders inaccurate, any monitoring device or method required to be maintained under the LPDES, shall, upon conviction, be subject to a fine of not more than \$10,000, or imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person, he shall be subject to a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

2. Civil Penalties

The Louisiana Revised Statutes LA. R. S. 30:2025 provides that any person found to be in violation of any requirement of this Subtitle may be liable for a civil penalty, to be assessed by the secretary, an assistant secretary, or the court, of not more than the cost to the state of any response action made necessary by such violation which is not voluntarily paid by the violator, and a penalty of not more than \$25,000 for each day of violation. However, when any such violation is done intentionally, willfully, or knowingly, or results in a discharge or disposal which causes irreparable or severe damage to the environment or if the substance discharge is one which endangers human life or health, such person may be liable for an additional penalty of not more than one million dollars.

SECTION F. DEFINITIONS

All definitions contained in Section 502 of the Clean Water Act shall apply to this permit and are incorporated herein by reference. Unless otherwise specified in this permit, additional definitions of words or phrases used in this permit are as follows:

1. "Clean Water Act" means the Clean Water Act (33 U.S.C. 1251 et. seq.), as amended.
2. "Administrator" means the Administrator of the U.S. Environmental Protection Agency.
3. "Applicable effluent standards and limitations" means all state and Federal effluent standards and limitations to which a discharge is subject under the Clean Water Act, including, but not limited to, effluent limitations, standards or performance, toxic effluent standards and prohibitions, and pretreatment standards.
4. "Applicable water quality standards" means all water quality standards to which a discharge is subject under the Clean Water Act.

5. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
6. "Daily Discharge" means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the sampling day. "Daily discharge" determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the "daily discharge" determination of concentration shall be arithmetic average (weighted by flow value) of all samples collected during that sampling day.
7. "Daily Maximum" discharge limitation means the highest allowable "daily discharge" during the calendar month.
8. "Director" means the U.S. Environmental Protection Agency Regional Administrator or an authorized representative.
9. "Environmental Protection Agency" means the U.S. Environmental Protection Agency.
10. "Grab sample" means an individual sample collected in less than 15 minutes.
11. "Industrial user" means a nondomestic discharger, as identified in 40 CFR 403, introducing pollutants to a publicly owned treatment works.
12. "LEQA" means the Louisiana Environmental Quality Act.
13. "Louisiana Pollutant Discharge Elimination System (LPDES)" means those portions of the Louisiana Environmental Quality Act and the Louisiana Water Control Law and all regulations promulgated under their authority which are deemed equivalent to the National Pollutant Discharge Elimination System (NPDES) under the Clean Water Act in accordance with Section 402 of the Clean Water Act and all applicable federal regulations.
14. "Monthly Average" (also known as Daily Average) discharge limitations means the highest allowable average of "daily discharge(s)" over a calendar month, calculated as the sum of all "daily discharge(s)" measured during a calendar month divided by the number of "daily discharge(s)" measured during that month. When the permit establishes monthly average concentration effluent limitations or conditions, the monthly average concentration means the arithmetic average (weighted by flow) of all "daily discharge(s)" of concentration determined during the calendar month where  $C$  = daily discharge concentration,  $F$  = daily flow and  $n$  = number of daily samples; monthly average discharge =

$$\frac{C_1F_1 + C_2F_2 + \dots + C_nF_n}{F_1 + F_2 + \dots + F_n}$$

15. "National Pollutant Discharge Elimination System" means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 318, 402, and 405 of the Clean Water Act.
16. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
17. "Sewage sludge" means the solids, residues, and precipitates separated from or created in sewage by the unit processes of a publicly owned treatment works. Sewage as used in this definition means any wastes, including wastes from humans, households, commercial establishments, industries, and storm water runoff, that are discharged to or otherwise enter a publicly owned treatment works.

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18. "Treatment works" means any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage and industrial wastes of a liquid nature to implement Section 201 of the Clean Water Act, or necessary to recycle or reuse water at the most economical cost over the estimated life of the works, including intercepting sewers, sewage collection systems, pumping, power and other equipment, and their appurtenances, extension, improvement, remodeling, additions, and alterations thereof.
19. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
20. For fecal coliform bacteria, a sample consists of one effluent grab portion collected during a 24-hour period at peak loads.
21. The term "MGD" shall mean million gallons per day.
22. The term "mg/L" shall mean milligrams per liter or parts per million (ppm).
23. The term "µg/L" shall mean micrograms per liter or parts per billion (ppb).
24. "Weekly average", other than for fecal coliform bacteria, is the highest allowable arithmetic mean of the daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week. The weekly average for fecal coliform bacteria is the geometric mean of the daily discharges over a calendar week.
25. "12-hour composite sample" consists of 12 effluent portions collected no closer together than one hour and composited according to flow. The daily sampling intervals shall include the highest flow periods.
26. "6-hour composite sample" consists of six effluent portions collected no closer together than one hour (with the first portion collected no earlier than 10:00 a.m.) and composited according to flow.
27. "3-hour composite sample" consists of three effluent portions collected no closer together than one hour (with the first portion collected no earlier than 10:00 a.m.) and composited according to flow.
28. Sanitary Wastewater Term(s):
- a. "24-hour composite sample" consists of a minimum of 12 effluent portions collected at equal time intervals over the 24-hour period and combined proportional to flow or a sample collected at frequent intervals proportional to flow over the 24-hour period.



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**State of Louisiana**  
**Department of Environmental Quality**



**MIKE FOSTER, JR.**  
GOVERNOR

**DALE GIVENS**  
SECRETARY

JUL 31 2002

Agency Interest No. 42610  
Permit No. LAQ102687  
Activity No. GEN20020001

Mr. Sidney Brian  
Natural Resources Recovery, Inc.  
7388 Highland Road, Ste. E  
Baton Rouge, LA 70808

RE: **Ronaldson Field Landfill & Recycling Facility**  
**Administrative Completeness Determination**

Dear Mr. Brian:

The Office of Environmental Services received your application for a water permit on July 19, 2002. The application has been determined to be administratively complete and has been assigned to the Municipal & Commercial Waste Section, Group 1. Please note that the Department may require additional information if technical deficiencies are found at a later date.

If you have any questions, please call Audrey Gaudet at (225) 765-2472. Thank you for your attention to this matter.

Sincerely,

Nathan Levy  
Manager, Stakeholder Outreach Section

NL/AG/ag

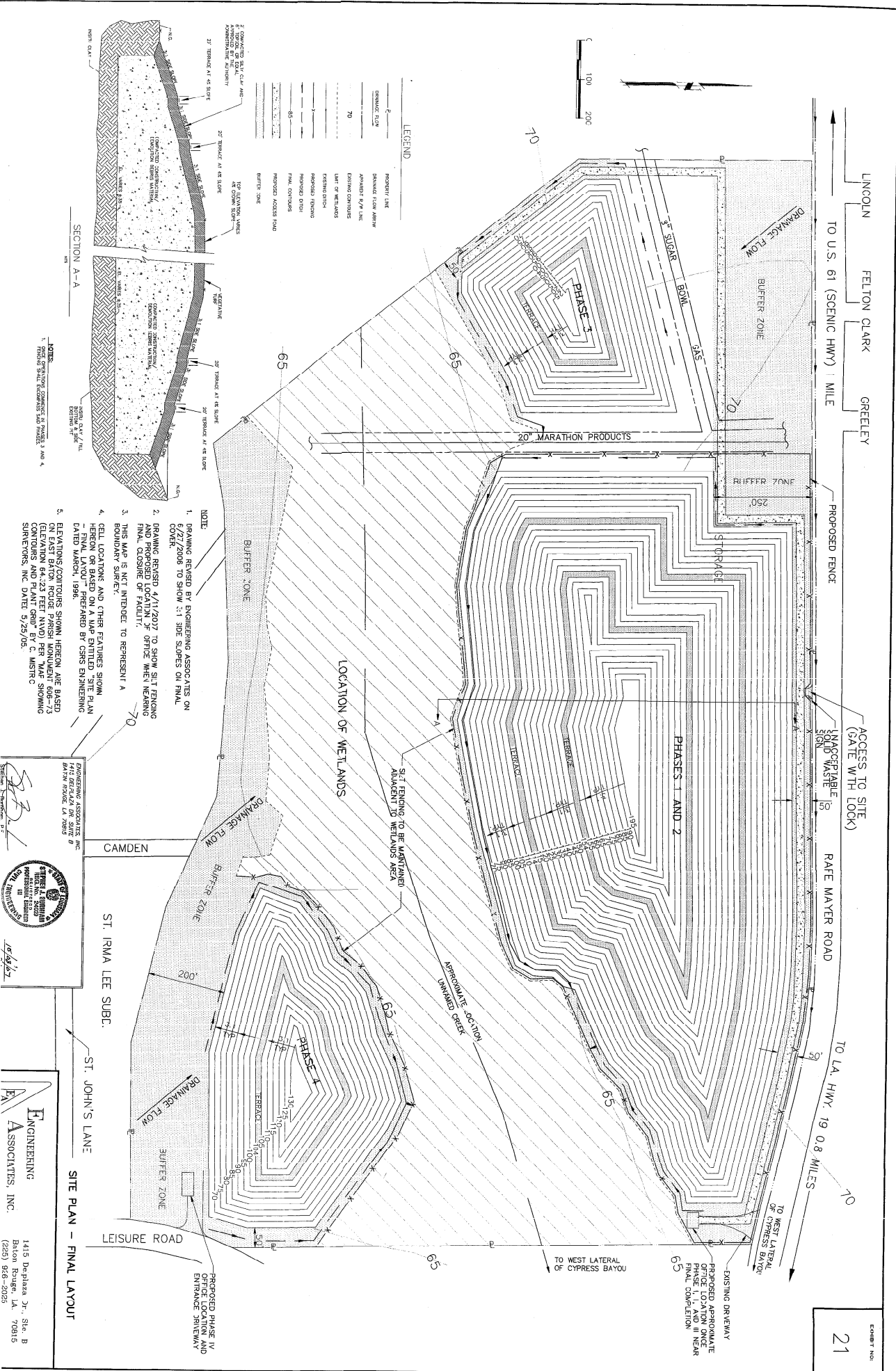
C: Capital Regional Office  
IO-W

OFFICE OF ENVIRONMENTAL SERVICES • P.O. BOX 82135 • BATON ROUGE, LOUISIANA 70884-2135

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**EXHIBIT 21**  
**SITE PLAN-FINAL LAYOUT**



**EXHIBIT 22**  
**AQUIFER MAP**



**EXHIBIT 23**  
**SUMMARY OF GEOTECHNICAL INVESTIGATION ACTIVITIES**





ENGINEERING

ASSOCIATES, INC.

CONSULTING ENGINEERS

CIVIL • ENVIRONMENTAL • LAND SURVEYING

## **SUMMARY OF GEOTECHNICAL INVESTIGATION ACTIVITIES**

**SID BRIAN SITE  
RAFE MEYER ROAD  
BATON ROUGE, LOUISIANA**

**Prepared for:**

**BRIAN DEVELOPMENT CO., INC.  
POST OFFICE BOX 1065  
BATON ROUGE, LOUISIANA 70821**

**OCTOBER, 1995  
PROJECT NO. 95138**

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Appendix A - Soil Boring Logs

Appendix B - Hydraulic Conductivity Test Results

Appendix C - Site Sketch





# SUMMARY OF GEOTECHNICAL INVESTIGATION ACTIVITIES

## SID BRIAN SITE RAFE MEYER ROAD BATON ROUGE, LOUISIANA

### 1.0 Introduction

At the request of Mr. Sid Brian of Brian Development Company, Inc., Engineering Associates has performed geotechnical investigation activities at a  $\pm 90$  acre site located on Rafe Meyer Road, Baton Rouge, Louisiana. The site is located in Sections 35 and 52, T-5-S, R-1-W, Greensburg Land District, East Baton Rouge Parish, Louisiana.

Two phases of investigation were performed by Engineering Associates. Phase I included the installation of two soil borings to depths of 24 feet below ground surface (bgs) and analysis of a soil sample for permeability characteristics. Phase II activities included the installation of four additional soil borings at depths ranging from 42-50 feet bgs.

Boring installation activities were performed at this site in an effort to determine the feasibility of utilizing the property as a Type III Landfill. A large portion of the property ( $\pm 30$  acres) has been excavated by a prior tenant to depths ranging from 25-40 feet bgs in conjunction with borrow pit operations. A detailed discussion of the investigative activities performed by Engineering Associates is provided in subsequent sections of this report. Applicable associated documentation has been provided in the appendices.



## 2.0 Scope of Work

### 2.1 Phase I Assessment Activities

On September 8, 1995, Engineering Associates personnel installed two soil borings at the subject site to depths of 24 feet bgs. The borings were numbered SB-1 and SB-2 and were placed on the northern edge of the excavated area on the site. The excavated area consists of a "shelf" which is approximately 25 feet below the natural ground surface, and a deeper "pit" which is approximately 45 feet below the natural ground surface. A berm has been constructed across the pit which divides the pit into two distinct areas. Both areas are presently holding water to depths of 10-15 feet.

The relative locations of borings SB-1 and SB-2 have been shown on the site sketch included as Appendix C. A more accurate map depicting the exact locations of the borings and pits is presently being prepared by Chenevert, Songy, Rodi, Soderberg (CSRS), Baton Rouge, Louisiana.

Borings SB-1 and SB-2 were advanced using a solid stem auger drill rig provided by Soil Testing Engineers (STE), Baton Rouge, Louisiana. Soils were visually classified continuously during advancement of the borings. Soil Boring Logs for borings SB-1 and SB-2 have been included in Appendix A. As shown, the soils encountered were noted to consist of clays and slightly silty clays in both borings. The soils were classified as CL or CH under the Unified Soil Classification System.

A wet silty clay approximately 6-12 inches thick was encountered in boring SB-1 at the 9-10 foot depth. Below the 9-10 foot depth the clay was observed to be less silty and only slightly moist. The clay was observed to be wet again at a depth of approximately 23 feet bgs. The boring was terminated at 24 feet bgs.

The soils observed in boring SB-2 were consistent with that of boring SB-1. However, a wet silty clay was not encountered in boring SB-2. As such, it is presumed that the water encountered at the 9-10 foot depth in boring SB-1 represents a non-continuous, perched water-bearing zone.



A soil sample was retained from the 20-22 foot depth in boring SB-1 for laboratory analysis. The sample was submitted to 'Soil Testing Engineers' geotechnical laboratory for analysis of hydraulic conductivity. The analysis was performed using a flexible wall permeameter test (ASTM D 5084 METHOD C). The permeability of the material sampled was reported to be  $1.21 \times 10^{-8}$  cm/sec. A copy of the laboratory analysis results is included in Appendix B.

Borings SB-1 and SB-2 were allowed to remain open for a several day period to facilitate collection of groundwater monitoring data. On September 11, 1995, three days subsequent to boring installation, the water level in boring SB-1 was measured and found to be 3.5 feet bgs. The water in boring SB-2 was found to be 4-6 feet bgs. Based on this information, it appears that the wet silty clay encountered at the bottom of each boring represents the upper limits of the site's groundwater aquifer.

As previously stated, borings SB-1 and SB-2 were installed on an excavation "shelf" approximately 25 feet below the site's natural ground surface. As such, Engineering Associates personnel were afforded the opportunity to visually inspect the sidewalls of the excavated area. A stainless-steel hand-auger was advanced approximately two feet into the excavation sidewall at four locations. Two of the hand-augured borings were placed in the northern excavation sidewall and two were placed in the southern excavation sidewall. The soils collected from the sidewall borings were visually classified and were determined to be a CH or CL material, consistent with borings SB-1 and SB-2.

## ***2.2 Phase II Assessment Activities***

On September 27 and 28, 1995, four additional soil borings were installed at the subject site. The borings were installed outside of the excavated "shelf" and "pit" within the site. The approximate locations of the borings are shown on the Site Sketch included in Appendix C.

The four additional borings, SB-3 through SB-6, were installed for the purpose of further confirming soil characteristics across the site. Boring SB-3 was installed at the northwest corner of the proposed landfill area and boring SB-4 was installed at the southwest corner of the proposed landfill area. Borings SB-5 and SB-6 were installed at the southeast and northeast corners of the proposed landfill, respectively.



All four Phase II soil borings were installed using a Geoprobe drill rig provided by Professional Technical Support Services, Baton Rouge, Louisiana. Soil samples were collected continuously and were visually classified as to soil type. Soil Boring Logs for borings SB-3 through SB-6 are included in Appendix A.

Soil boring SB-3 was drilled to a total depth of 50 feet bgs. Borings SB-4 and SB-5 were each drilled to depths of 44 feet bgs, and boring SB-6 was drilled to a depth of 42 feet. The soils encountered were consistently classified as clays and silty clays (CH and CL) under the Unified Soil Classification System. A silty sand (SM) was encountered at the 46-50 foot depth in boring SB-3, and at the 42-44 foot depth in boring SB-4. Water was encountered in each boring at the 25-30 foot depth. However, the water was present in a very narrow band of silty clay material (6-12 inches), and appeared to represent a perched water-bearing zone.

Upon completion of all boring installations, the boreholes were grouted flush with the surrounding grade. Grouting activities were performed on September 28, 1995. In addition to borings SB-3 through SB-6, borings SB-1 and SB-2 were also grouted on that date.



### 3.0 Summary and Conclusions

During the period of September 8, 1995 through September 28, 1995, Engineering Associates installed six soil borings (SB-1 through SB-6) at the subject site. Borings SB-1 and SB-2 were installed on September 8, 1995 to depths of 24 feet bgs each. Borings SB-3 through SB-6 were installed on September 27, and 28, 1995 to depths ranging from 42-50 feet bgs.

Soil types encountered in each boring consisted of clays (CH) and silty clays (CL). A wet, silty clay or silty sand (SM) was encountered at the bottom of each boring. An intermediate, narrow water-bearing unit was also encountered at a depth of 25-30 feet below the natural ground surface in several borings. This unit was not continuous and is believed to represent a perched water-bearing zone. Actual groundwater across the site appears to be present at depths of 40-50 feet below the natural ground surface.

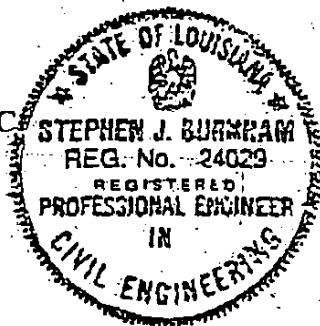
Based upon the visual classifications performed in conjunction with this assessment, subsurface soils on this site consist predominantly of low permeability clays to depths of 40-50 feet. Laboratory analysis results for a representative soil sample collected from boring SB-1 indicate that the soil exhibits a hydraulic conductivity of  $1.21 \times 10^{-8}$  cm/sec. As such, the soil represents an excellent natural liner for purposes of landfill construction.

This report was prepared by me or under my direct supervision and control.

ENGINEERING ASSOCIATES, INC.

*St B L*

Stephen J. Burnham, P.E.



10/5/95

Date



**APPENDIX A**

**SOIL BORING LOGS**

EA-12/10-95/95130.rpt



**ENGINEERING**

**ASSOCIATES, INC.**

**CONSULTING ENGINEERS**

SOIL BORING LOG

PROJECT NUMBER: 95138	PROJECT NAME: Sid Brian Site-Rafe Meyer Road	DATE: 09-08-95
BORING NUMBER: 30-1	COORDINATES: NA	DATE STARTED: 09-08-95
ELEVATION: NA	OWL: DEPTH: 12.90' TIME: 1210	DATE COMPLETED: 09-08-95
ENGINEERING ASSOCIATES PERSONNEL: Troy Allen	PAGE 1 OF 2	
DRILLING METHOD: Solid Stem Auger		

DEPTH FEET	SOIL TYPE S M A E M T P H L O E D	% R E C O V E R Y	DESCRIPTION	SOIL TYPE S U B C L	W M S E I A S T U E R N E C D Y	Additional Remarks
0	ST		Stiff, tan & brown CLAY w/calcium nodules, dry		2.0	
0-2		75		CH		
	ST		Very stiff, tan & brown w/ red streaks, slightly		3.0	slightly moist, slightly silty @ 4"
2-4		75	moist, CLAY w/calcium nodules	CH		
5	ST		Stiff, tan, brown & gray w/ red streaks, slightly		2.0	Slightly silty to 5', moist
4-6		100	moist CLAY, calcium nodules	CL		
	ST		Very stiff, orange, brown and gray, CLAY w/calcium			
6-8		100	nodules	CL	3.0	Moist
	ST		Hard, orange, brown and gray, fewer calcium			
8-10		100	nodules wet @ 9', CLAY	CL	4.5	Slightly silty, wet @ 9"
	ST		Hard, orange, brown & gray, traces of silt, CLAY,			
10-12		50	calcium deposits	CL	4.5	Slightly moist
	ST		Hard, orange, brown & gray CLAY, with			
12-14		100	traces of silt	CL	4.5	Slightly moist
25	ST					
14-16		75		CL	4.5	Slightly moist
	ST		Hard, orange, brown & gray CLAY, ferrous			
16-18		100	nodules, lean clay	CH	4.5	Slightly moist
	ST		Hard, orange, brown, & gray,			
18-20		100	CLAY	CH	4.5	Slightly moist

Notes: Measured consistency is in Tonft<sup>2</sup> (TSF)

All Times Military

ST = Shelby Tube

NA = Not Available

\* Sample selected for lab analysis

Drilling Subcontractor: Soil Testing Engineers  
Driller: Dempsey Boudreaux

QA Approved by: 



ENGINEERING

ASSOCIATES, INC.

CONSULTING ENGINEER

## SOIL BORING LOG

PROJECT NUMBER: 95138	PROJECT NAME: Sid Brian Site-Rafe Meyer Road	DATE: 09-08-95
BORING NUMBER: SU-1	COORDINATES: NA	DATE STARTED: 09-08-95
ELEVATION: NA	QWL: DEPTH: 12.90' TIME: 1210	DATE COMPLETED: 09-08-95
ENGINEERING ASSOCIATES PERSONNEL: Trev Allen	DRILLING METHOD: Solid Stem Auger	PAGE 2 OF 2

DEPTH (FEET)	SOIL TYPE (S.M. & P.H. & L.O. & E.O.)	% RECOVER OVER SAMPLING	DESCRIPTION	TEST RESULTS (S, Y, U, M, S, B, C, O, S, L)	MOISTURE (%)	ADDITIONAL REMARKS
20-22*	ST	100	Hard, brown w/orange tint, fat CLAY with ferrous nodules	CH	4.25	Slightly moist
22-24	ST	100	Hard, tan & brownish beige slightly SILTY CLAY	CL	4.25	Moist to wet @ 23.0'
25			Total Boring Depth @ 24 ft			
10						
15						
20						

Notes: Measured consistency is in Ton/ft<sup>2</sup> (TSF)

All Times Military

ST = Shelby Tube

NA = Not Available

\* Sample selected for lab analysis

Drilling Subcontractor: Soil Testing Engineers

Driller: Dempsey Boudreaux

QA Approved by: 

ENGINEERING

ASSOCIATES, INC.

CONSULTING ENGINEER



SOIL BORING LOG

PROJECT NUMBER: 95138	PROJECT NAME: Sid Brian Ste-Rafe Meyer Road	DATE: 09-08-95
BORING NUMBER: SU-2	COORDINATES: NA	DATE STARTED: 09-08-95
ELEVATION: NA	QWL: 23.20'	TIME: 1215
ENGINEERING ASSOCIATES PERSONNEL: Troy Allen	DATE COMPLETED: 09-08-95	
DRILLING METHOD: Solid Stem Auger	PAGE 1 OF 2	

DEPTH FEET	TEST METHOD	% RECOVER Y	DESCRIPTION	SOIL TYPE	MOISTURE CONTENT	Additional Remarks
0	ST		Very stiff, brown & light gray CLAY, w/calcium deposits, dry	CH	3.5	
0-2	ST	75				
2-4	ST	75	Very stiff, brown w/orange and gray streaks, CLAY w/calcium deposits	CH	3.5	At approximately 3'-a wet, silica based gravel was found and was 3" thick
4-6	ST	100	Stiff, brown w/orange and gray streaks, slightly SILTY CLAY, w/calcium deposits, very stiff @ 6ft.	CL	2.5	Slightly moist
6-8	ST	100	Very stiff, brown, gray and orange CLAY w/silt traces	CL	2.5	Slightly moist
8-10	ST	75	Very stiff, light gray and tan CLAY w/slight SILT traces	CL	3.5	Slightly moist
10-12	ST	100	Very stiff, light gray and tan CLAY turning to fat CLAY @ 11.0', calcium nodules	CH	3.5	Slightly moist
12-14	ST	100	Fat CLAY, fewer calcium nodules	CH	3.5	Slightly moist
14-16	ST	100	Fat CLAY, ferrous nodules	CH	3.5	Slightly moist
16-18	ST	100	Fat CLAY, stained w/ferrous streaks	CH	3.5	Slightly moist
18-20	ST	100	Alternating fat, lean, fat, lean, stained w/ferrous streaks, slightly moist	CH	4.0	Slightly moist

Notes: Measured consistency is in Ton/ft<sup>2</sup> (TSF)  
 All Times Military  
 ST = Shelby Tube  
 NA = Not Available

Drilling Subcontractor: Soil Testing Engineers  
 Driller: Dempsey Boudreaux

QA Approved by:

*[Signature]*



## SOIL BORING LOG

PROJECT NUMBER: 95138	PROJECT NAME: Sid Brian Shu-Rafe Meyer Road	DATE: 09-08-95
BORING NUMBER: SH-2	COORDINATES: NA	DATE STARTED: 09-08-95
ELEVATION: NA	QWL: DEPTH: 23.20' TIME: 1215	DATE COMPLETED: 09-08-95
ENGINEERING ASSOCIATES PERSONNEL: Troy Allen	PAGE 2 OF 2	
DRILLING METHOD: Solid Stem Auger		

DEPTH FEET	SOIL TYPE	WATER CONTENT %	DESCRIPTION	UNIFORM CLASS	LIQUID LIMIT %	PLASTIC LIMIT %	SHRINKAGE LIMIT %	ADDITIONAL REMARKS
20-22	ST	100	Same as previous sample, changing @ 21.0' to SILTY CLAY, moist @ 21'	CL	4.25			Moist
22-24	ST	100	Very stiff, tan & brown CLAY changing to SILTY streaked CLAY @ 22.0'	CL	3.75			Clay, moist
24			Total Boring Depth @ 24 ft		2.50			Silty Clay, moist

Notes: Measured consistency is in Ton/ft<sup>2</sup> (TSF)

All Times Military

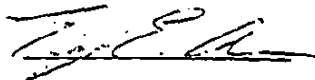
ST = Shelby Tube

NA = Not Available

Drilling Subcontractor: Soil Testing Engineers

Driller: Dempsey Boudreaux

QA Approved by:




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## SOIL BORING LOG

PROJECT NUMBER: 95138	PROJECT NAME: Sid Brian Site-Rafe Meyer Road	DATE: 09-27-95
BORING NUMBER: SB-3	COORDINATES: NA	DATE STARTED: 09-27-95
ELEVATION: NA	QWL: DEPTH: 47.0'	DATE COMPLETED: 09-27-95
ENGINEERING ASSOCIATES PERSONNEL: Troy Allen		PAGE 1 OF 3
DRILLING METHOD: Geoprobe		

DEPTH (FEET)	SOIL SAMPLE TYPE & LOCATION	WATER CONTENT (%)	DESCRIPTION	SOIL CLASSIFICATION	DEPTH (FEET)	ADDITIONAL REMARKS
0	SB	0845	Hard, orange & brown CLAY, dry	CH	4.50	
0-4'		50				
5	SB	0850	Stiff, orange & brown w/black streaks, Slightly SILTY CLAY, Slightly moist	CL	2.00	Calcium nodules
4'-8'		100				
10	SB	0900	Same as above	CL	2.50	
8'-12'		100				
15	SB	0905	Very stiff, gray w/orange & black streaks, slightly SILTY CLAY, slightly moist	CL	3.50	
12'-14'		100				
15	SB	0915	Very stiff, gray w/orange streaks, CLAY	CH	3.50	
14'-16'		100				
15	SB	0925	Hard, gray & orange, CLAY, slightly moist	CH	4.00	Calcium nodules
16'-18'		100				
15	SB	0935	Same as above	CH	4.00	Calcium nodules
18'-20'		100				

Notes: Measured consistency is in Ton/ft<sup>2</sup> (TSF)

All Times Military

SB = Open ended Sampling Barrel

NA = Not Available

Sampling interval switched from 4' to 2' intervals at 12'

Drilling Subcontractor: Professional Technical Support Services  
Driller: Robert LeggettQA Approved by: 

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SOIL BORING LOG

PROJECT NUMBER: 95138	PROJECT NAME: Sid Brian Site-Rafe Meyer Road	DATE: 09-27-95
BORING NUMBER: SB-3	COORDINATES: NA	DATE STARTED: 09-27-95
ELEVATION: NA	OWL: DEPTH: 47.0'	TIME: 1420
ENGINEERING ASSOCIATES PERSONNEL: Troy Allen	DATE COMPLETED: 09-27-95	
DRILLING METHOD: Geoprobe	PAGE 2 OF 3	

DEPTH FEET DOWN	DEPTH FEET DOWN	DEPTH FEET DOWN	DESCRIPTION	DEPTH FEET DOWN	DEPTH FEET DOWN	Additional Remarks
	SB	0945	Hard, gray & orange, CLAY, slightly moist			
	10'-22'	75		CH	4.25	
	SB	0955	Very stiff, light gray w/orange streaks, slightly SILTY			
	22'-24'	100	CLAY, slightly moist	CL	3.50	Calcium nodules
25	SB	1005	Med. stiff, light gray & orange, slightly SILTY CLAY,			
	24'-26'	100	very moist	CL	0.50	Boring producing perched water
	SB	1015	Med stiff, light gray & orange, SILTY CLAY,			
	26'-28'	100	moist	CL	0.50	
	SB	1020	Med stiff, light gray & orange slightly SILTY CLAY,			
30	28'-30'	100	slightly moist	CL	1.00	
	SB	1025	Very stiff, light gray & orange CLAY,			The moist silty clay pocket
	30'-32'	100	slightly moist	CH	3.50	ended @ 30.5'
	SB	1035	Very stiff, light gray, CLAY, slightly moist			At this time the boring has approx.
	32'-34'	100		CH	4.00	8' of water column
35	SB	1045	Hard, light gray & orange,			
	34'-36'	100	CLAY, slightly moist	CH	4.25	Approx. 8' water column
	SB	1100				
	36'-38'	100	Same as above	CH	4.25	Approx. 8' water column
	SB	1115				
40	38'-40'	100	Same as above	CH	4.25	Approx. 10' water column

Notes: Measured consistency is in Ton/ft<sup>2</sup> (TSF)  
 All Times Military  
 SB = Open ended Sample Barrel  
 NA = Not Available

Drilling Subcontractor: Professional Technical Support Services  
 Driller: Robert Leggett

QA Approved by: 



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**PAGE 3 OF 3**

Additional Remarks

QA Approved by:

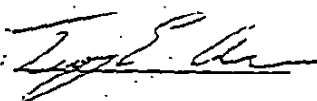
SOIL BORING LOG

PROJECT NUMBER: 95138		PROJECT NAME: Sid Brian Site-Rafe Meyer Road	
BORING NUMBER: SB-4	COORDINATES: NA	DATE:	09-27-95
ELEVATION: NA	QWL: DEPTH: 43.0'	TIME: 1900	DATE STARTED: 09-27-95
ENGINEERING ASSOCIATES PERSONNEL:	Troy Allen	DATE COMPLETED:	09-27-95
DRILLING METHOD: Geoprobe	PAGE 1 OF 3		

DEPTH	SOIL TYPE	STRENGTH	DESCRIPTION	MOISTURE	CONSISTENCY	ADDITIONAL REMARKS
0-2'	SB	1440	Hard, dark brown, CLAY,			
		100	slightly moist	CH	4.25	
2-4'	SB	1445	Same as above	CH	4.00	
4-6'	SB	1450	Very stiff, brown & gray, slightly SILTY CLAY,			
		100	slightly moist	CL	3.50	Calcium nodules
6-8'	SB	1455	Very stiff, gray w/brown & orange streaks,			
		100	CLAY, slightly moist	CH	3.50	
8-10'	SB	1500	Very stiff, gray w/orange streaks, CLAY,			
		100	slightly moist	CH	3.50	
10-12'	SB	1505	Same as above			
		100		CH	2.50	
12-14'	SB	1510	Stiff, gray w/orange streaks CLAY, slightly moist,			
		100		CH	2.00	
14-16'	SB	1515	Very stiff, gray & orange, CLAY,			
		100	slightly moist	CH	2.50	Calcium nodules
16-18'	SB	1520	Same as above			
		100		CH	2.50	Calcium nodules
18-20'	SB	1525	Same as above			
		100		CH	3.00	Calcium nodules

Notes: Measured consistency is in Ton/ft<sup>2</sup> (TSF)  
 All Times Military  
 SB = Open ended Sampling Barrel  
 NA = Not Available

Drilling Subcontractor: Professional Technical Support Services  
 Driller: Robert Leggett

QA Approved by: 



## SOIL BORING LOG

PROJECT NUMBER: 95138	PROJECT NAME: Sid Brian Site-Rafe Meyer Road	DATE: 09-27-95
BORING NUMBER: SB-4	COORDINATES: NA	DATE STARTED: 09-27-95
ELEVATION: NA	GWL: DEPTH: 43.0'	DATE COMPLETED: 09-27-95
ENGINEERING ASSOCIATES PERSONNEL: Troy Allen		PAGE 2 OF 3
DRILLING METHOD: Geoprobe		

DEPTH	STATION	PERCENT MOISTURE	DESCRIPTION	TEST	WATER CONTENT	ADDITIONAL REMARKS
	SB	1540	Very stiff, gray & orange CLAY,			
	20'-22'	100	slightly moist	CH	3.00	Calcium nodules
	SB	1555				
	22'-24'	100	Same as above	CH	3.00	
25	SB	1615				
	24'-26'	100	Same as above	CH	3.00	
	SB	1630	Very stiff, light gray, brown & orange, CLAY,			
	26'-28'	100	slightly moist	CH	3.50	
30	SB	1645	Med. stiff, light gray & brown, SILTY CLAY,			
	28'-30'	100	moist	CL	1.00	Boring producing perched water
	SB	1705	Very stiff, light gray & brown,			Approx. 8' water column
	30'-32'	100	CLAY, slightly moist	CH	3.50	Calcium nodules
	SB	1725	Hard, light gray & orange,			
	32'-34'	100	CLAY, slightly moist	CH	4.25	Approx. 9' water column
35	SB	1740				
	34'-36'	75	Same as above	CH	4.25	Approx. 9' water column
	SB	1755				Approx. 12' water column
	36'-38'	100	Same as above	CH	4.25	Calcium nodules
	SB	1815				Approx. 14' water column
40	38'-40'	100	Same as above	CH	4.25	Calcium nodules

Notes: Measured consistency is in Ton/ft<sup>2</sup> (TSF)

All Times Military

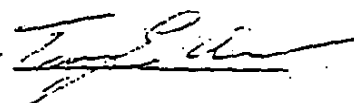
SB = Open ended Sample Barrel

NA = Not Available

Drilling Subcontractor: Professional Technical Support Services

Driller: Robert Leggett

QA Approved by:




## SOIL BORING LOG

PROJECT NUMBER: 95138	PROJECT NAME: Sid Drian Site-Rafe Meyer Road	DATE: 09-27-95
BORING NUMBER: SB-4	COORDINATES: NA	DATE STARTED: 09-27-95
ELEVATION: NA	OWL: DEPTH: 43.0'	TIME: 1900
ENGINEERING ASSOCIATES PERSONNEL: Troy Allen	DATE COMPLETED: 09-27-95	
DRILLING METHOD: Geoprobe	PAGE 3 OF 3	

DEPTH FEET	SB SAMPLE DEPTH FEET	ST SAMPLE DEPTH FEET	DESCRIPTION	SOIL TYPE	MOISTURE CONTENT %	Additional Remarks
	SB	1830	Hard, light gray & orange CLAY,			Turning to silty sand @
	40'-42'	100	slightly moist	CH	4.25	41.5', wet
	SB	1850	Loose, gray SILTY SAND,			
	43'-44'	100	wet	SM	NA	Total approx water column of 10.0'
45			Total boring depth @ 44.0'			
50						

Notes: Measured consistency is in Ton/ft<sup>2</sup> (TSF)  
 All Times Military  
 SB = Open ended Sample Barrel  
 NA = Not Available

Drilling Subcontractor: Professional Technical Support Services  
 Driller: Robert Leggett

QA Approved by: 

12/27/95 13:50 PCD-LWA



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SOIL BORING LOG

PROJECT NUMBER: 95138	PROJECT NAME: Slid Urban Site-Rufe Meyer Road	DATE: 09-28-95
BORING NUMBER: SB-5	COORDINATES: NA	DATE STARTED: 09-28-95
ELEVATION: NA	OWL: DEPTH: -43.0'	DATE COMPLETED: 09-28-95
ENGINEERING ASSOCIATES PERSONNEL: Tray Allen		PAGE 2 OF 3
DRILLING METHOD: Geoprobe		

DEPTH FEET	DEPTH METERS	PERCENT MOISTURE	DESCRIPTION	SOIL TYPE	WATER CONTENT PERCENT	Additional Remarks
	SB	0840	Very stiff, light gray & orange, w/ferrous stains.			
	20'-22'	100	CLAY, slightly moist	CH	3.50	Calcium nodules
	SB	0850	Very stiff, light gray & orange CLAY turning to moist			
	22'-24'	100	SILTY CLAY @ 23.5'	CH	3.00	Calcium nodules
25	SB	0900	Very stiff, light gray & orange SILTY CLAY,			
	24'-26'	75	moist	CL	2.50	Calcium nodules
	SB	0910	Very stiff, light gray & orange, slightly SILTY CLAY,			Boring producing perched water
	26'-28'	100	slightly moist	CL	3.00	Fewer calcium nodules
30	SB	0920	Very stiff, light gray & orange,			
	28'-30'	100	CLAY, slightly moist	CH	4.00	Approx. 1.0' water column
	SB	0930	Same as above			
	30'-32'	100		CH	4.00	Approx. 1.0' water column
	SB	0945	Hard, light gray and orange,			
	32'-34'	100	CLAY, slightly moist	CH	4.25	Approx. 2.0' water column
35	SB	1000	Hard, light gray & orange CLAY, w/slight traces of			
	34'-36'	100	silt, slightly moist	CH	4.0	Approx. 2.0' water column
	SB	1015	Same as above			
	36'-38'	100		CH	4.25	Approx. 2.0' water column
	SB	1035	Hard, light gray CLAY,			
40	38'-40'	100	slightly moist	CH	4.25	Approx. 2.0' water column

Notes: Measured consistency is in Ton/ft<sup>2</sup> (TSF)

All Times Military

SB = Open ended Sample Barrel

NA = Not Available

Drilling Subcontractor: Professional Technical Support Services  
Driller: Robert Leggett

QA Approved by:

*[Signature]*



SOIL BORING LOG

PROJECT NUMBER: 95138		PROJECT NAME: Sid Brian Site-Rafe Meyer Road		
BORING NUMBER: SB-5	COORDINATES: NA	DATE: 09-28-95		
ELEVATION: NA	QWL: DEPTH: 43.0'	TIME: 1120	DATE STARTED: 09-28-95	
ENGINEERING ASSOCIATES PERSONNEL: Troy Allen		DATE COMPLETED: 09-28-95		
DRILLING METHOD: Geoprobe		PAGE 1 OF 3		

DEPTH FEET	SOIL TYPE	DEPTH FEET	DESCRIPTION	SYMBOL	CONSISTENCY	ADDITIONAL REMARKS
0	SB	0730	Very stiff, dark brown CLAY,			
0'-2'		100	slightly moist	CH	2.25	
	SB	0735	Very stiff, brown & gray CLAY,			
2'-4'		100	slightly moist	CH	2.25	Calcium nodules
5	SB	0740				
4'-6'		100	Same as above	CH	2.25	Fewer calcium nodules
	SB	0745	Very stiff, light gray and orange CLAY,			
6'-8'		100	slightly moist	CH	3.00	Fewer calcium nodules
	SB	0750				
10	SB	0755	Same as above	CH	3.25	
10'-12'		100	Same as above	CH	3.50	
	SB	0800				
12'-14'		100	Same as above	CH	3.25	
15	SB	0805				
14'-16'		100	Same as above	CH	3.50	
	SB	0810	Very stiff, light gray and orange w/ferrous stains,			
16'-18'		100	CLAY, slightly moist	CH	3.75	Calcium nodules
	SB	0825				
20	SB	0830	Same as above	CH	3.50	Calcium nodules
18'-20'		100				

Notes: Measured consistency is in Ton/ft<sup>2</sup> (TSF)  
 All Times Military  
 SB = Open ended Sampling Barrel  
 NA = Not Available

Drilling Subcontractor: Professional Technical Support Services  
 Driller: Robert Leggett

QA Approved by:

*[Signature]*



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SOIL BORING LOG

PROJECT NUMBER: 95138	PROJECT NAME: Sid Brian Site-Rafe Meyer Road
BORING NUMBER: SB-5	COORDINATES: NA
ELEVATION: NA	DATE: 09-28-95
ENGINEERING ASSOCIATES PERSONNEL: Troy Allen	DATE STARTED: 09-28-95
DRILLING METHOD: Geoprobe	DATE COMPLETED: 09-28-95

PAGE 3 OF 3

DEPTH FEET	DEPTH METERS	PERCENT MOISTURE	DESCRIPTION	SOIL TYPE	WATER CONTENT PERCENT	Additional Remarks
SB	10.50		Very stiff, gray & orange SILTY CLAY,			
40'-42'	100		moist	CL	2.25	Approx. 2.5' water column
SB	11.10		Very stiff, gray & orange SILTY CLAY,			
42'-44'	100		very moist	CL	2.00	Total approx. water column of 4.0'
45			Total boring depth @ 44.0'			
50						

Notes: Measured consistency is in Ton/ft<sup>2</sup> (TSF)  
 All Times Military  
 SB = Open ended Sample Barrel  
 NA = Not Available

Drilling Subcontractor: Professional Technical Support Services  
 Driller: Robert Leggett

QA Approved by: 



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## SOIL BORING LOG

PROJECT NUMBER: 95138	PROJECT NAME: Sid Brian Site-Raft Meyer Road	DATE: 09-28-95
BORING NUMBER: SB-6	COORDINATES: NA	DATE STARTED: 09-28-95
ELEVATION: NA	QWL: DEPTH: 40.0'	TIME: 1600
ENGINEERING ASSOCIATES PERSONNEL: Troy Allen	DATE COMPLETED: 09-28-95	
DRILLING METHOD: Geoprobe	PAGE: 1 OF 3	

DEPTH	SB	TIME	DESCRIPTION	CONSISTENCY	REMARKS
0	SB	1135	Hard, light brown & gray		
0'-2'		100	CLAY, dry	CH	Limited calcium nodules
	SB	1140	Medium stiff, brown & orange, slightly SILTY CLAY,		
2'-4'		75	slightly moist	CL	Limited calcium nodules
5	SB	1150			
4'-6'		75	Same as above	CL	Limited calcium nodules
	SB	1155			
6'-8'		100	Same as above	CL	0.75
	SB	1200	Stiff, brown & orange w/gray streaks, CLAY		
8'-10'		100	slightly moist	CH	1.75
	SB	1210			
10'-12'		100	Same as above	CH	2.00
	SB	1215	Very stiff, brown & gray w/orange streaks,		
12'-14'		100	CLAY, slightly moist	CH	3.00
15	SB	1230	Very stiff, light gray w/orange & brown streaks,		
14'-16'		100	CLAY, slightly moist	CH	3.25
	SB	1240			
16'-18'		100	Same as above	CH	3.25
	SB	1250			
18'-20'		100	Same as above	CH	3.50

Notes: Measured consistency is in Ton/ft<sup>2</sup> (TSF)

All Times Military

SB = Open ended Sampling Barrel

NA = Not Available

Drilling Subcontractor: Professional Technical Support Services  
Driller: Robert LeggettQA Approved by: 

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## SOIL BORING LOG

PROJECT NUMBER: 95138	PROJECT NAME: Sid Brian Site-Rafe Meyer Road
BORING NUMBER: SB-6	COORDINATES: NA
ELEVATION: NA	GWL: -40.0' TIME: 1600
ENGINEERING ASSOCIATES PERSONNEL: Troy Allen	DATE: 09-28-95
DRILLING METHOD: Geoprobe	DATE STARTED: 09-28-95
	DATE COMPLETED: 09-28-95
	PAGE 2 OF 3

DEPTH	SOIL TYPE	DEPTH (ft)	DESCRIPTION	SOIL TYPE	DEPTH (ft)	Additional Remarks
25	SB	1305	Very stiff, light gray w/orange streaks, CLAY,	CH	3.50	
		20'-22'	slightly moist			
	SB	1315	Stiff, light gray w/orange streaks, slightly SILTY	CL	1.50	
		22'-24'	CLAY, slightly moist			
	SB	1330	Medium stiff, light gray & orange,	CL	1.00	Boring producing perched water
		24'-26'	slightly SILTY CLAY, moist			Approx. 1.0' water column
	SB	1345	Medium stiff, light gray & orange, SILTY CLAY,	CL	1.00	Approx. 2.5' water column
		26'-28'	& moist, turning to CLAY @ 27.5'			
30	SB	1400	Stiff, light gray & orange, CLAY,	CH	2.00	Approx. 3.0' water column
		28'-30'	slightly moist			
	SB	1425	Very stiff, light gray w/orange streaks,	CH	3.50	Approx. 4.5' water column
		30'-32'	CLAY, slightly moist			Calcium nodules
	SB	1445	Same as above	CH	3.75	Approx. 6.0' water column
		32'-34'				Calcium nodules
35	SB	1500	Very stiff, light gray & tan CLAY,	CH	2.75	Approx. 7.5' water column
		34'-36'	slightly moist			
	SB	1515	Medium stiff, light gray & tan, slightly SILTY CLAY,	CL	1.25	Approx. 10.0' water column
		36'-38'	moist			
40	SB	1530	Medium stiff, light tan & gray, SILTY CLAY	CL	1.00	Approx. 12.5' water column
		38'-40'	very moist			

Notes: Measured consistency is in Ton/ft<sup>2</sup> (TSF)

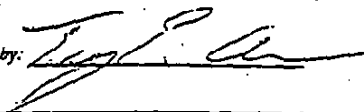
All Times Military

SB = Open ended Sample Barrel

NA = Not Available

Drilling Subcontractor: Professional Technical Support Services  
Driller: Robert Leggett

QA Approved by:




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SOIL BORING LOG

PROJECT NUMBER: 95158	PROJECT NAME: Sld Brian Site-Rafe Meyer Road	DATE: 09-28-95
BORING NUMBER: SB-6	COORDINATES: NA	DATE: 09-28-95
ELEVATION: NA	OWL: DEPTH: 40.0'	TIME: 1600
ENGINEERING ASSOCIATES PERSONNEL: Troy Allen	DATE COMPLETED: 09-28-95	
DRILLING METHOD: Geoprobe	PAGE 3 OF 3	

DEPTH (FEET)	SOIL TYPE (S.M.A.T.P.T.H.L.D.O.E.D.O.)	WATER CONTENT (%) (STC.A.T.O.M.M.V.P.E.R.E.Z.Y)	DESCRIPTION	WATER CONTENT (%) (S.W.Y.U.S.C.S.L)	WATER CONTENT (%) (M.S.E.I.A.S.T.U.E.R.N.T.E.C.S.D.Y.F)	Additional Remarks
SB	1545		Medium stiff, light tan & gray, SILTY CLAY			Total Approx. water
40'-42'	100		very moist to wet	CL	1.00	column of 16.0'
			Total boring depth @ 42.0'			

Notes: Measured consistency is in Ton/ft<sup>3</sup> (TSF)  
 All Times Military  
 SB = Open ended Sample Barrel  
 NA = Not Available

Drilling Subcontractor: Professional Technical Support Services  
 Driller: Robert Leggett

QA Approved by: 



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## APPENDIX B

### HYDRAULIC CONDUCTIVITY TEST RESULTS

EA-12/10-95/95130.rpt



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## APPENDIX C

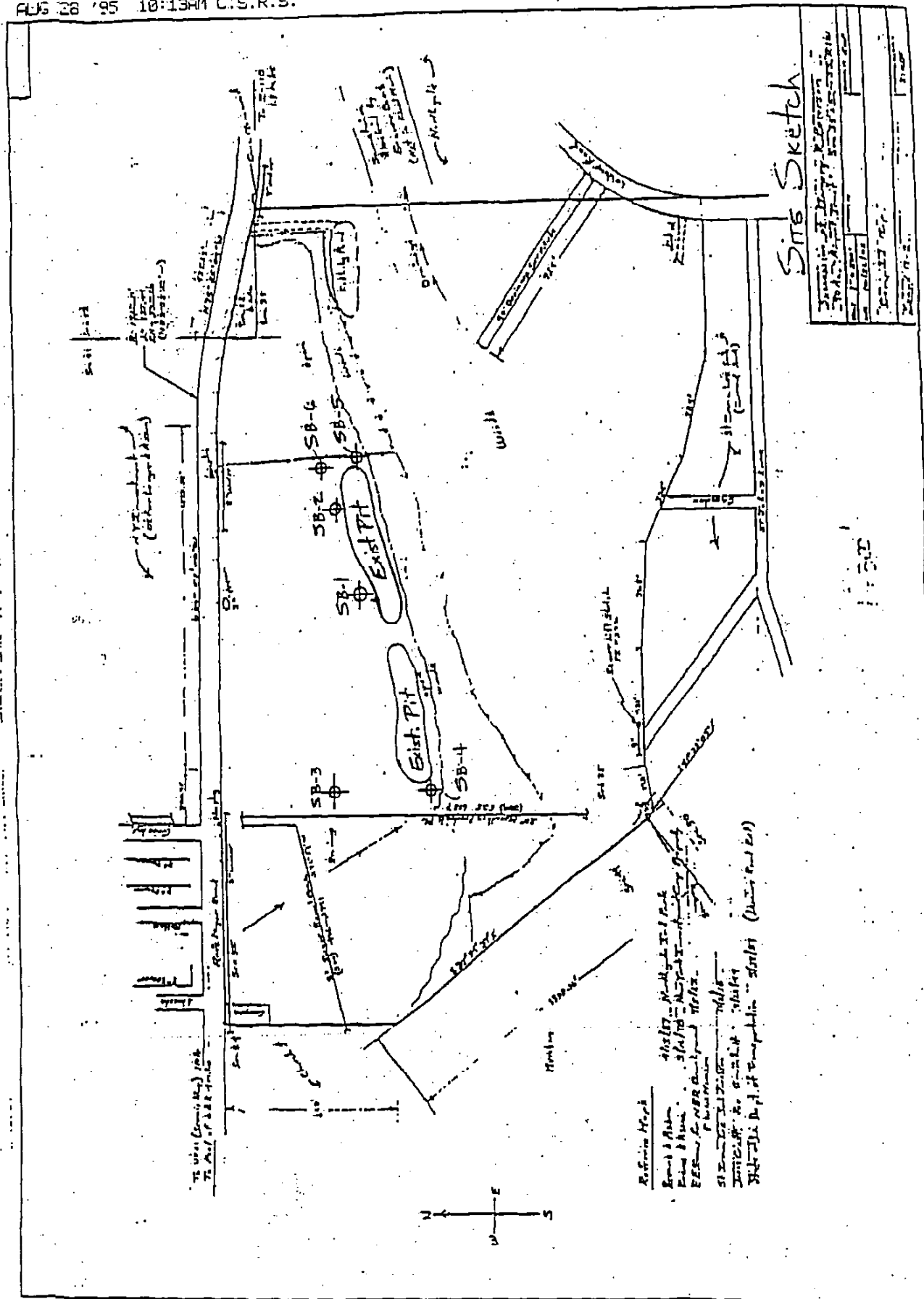
## SITE SKETCH

EA-12/10-95/95130.rpt



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AUG 28 '95 10:13AM C.S.R.S.





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☒ RJR  
☐ CJP

JAN 17 1996

Jef

January 10, 1996

Mr. Hamilton Shaw  
 Louisiana Department of Environmental Quality  
 Solid Waste Division  
 P.O. Box 82178  
 Baton Rouge, LA 70884-2178

☐ Project No. 95138  
 Project No. \_\_\_\_\_  
 File Name \_\_\_\_\_

Type III Landfill Permit Application  
Sid Brian Site  
Rafe Meyer Road  
East Baton Rouge Parish, Louisiana

Dear Mr. Shaw:

This correspondence is in follow-up to our recent telephone conversation regarding the captioned site. During our conversation, you requested information relative to plugging and abandonment of the soil borings drilled at the site.

Please be advised that all soil borings (SB-1 through SB-6) were subsequently plugged and abandoned in accordance with applicable regulations. The borings were plugged with a 5% bentonite/cement grout slurry.

Should you have any questions or require additional information, do not hesitate to call.

Sincerely,

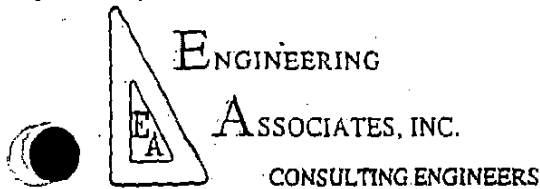
ENGINEERING ASSOCIATES, INC.

Stephen J. Burnham, P.E.  
 President

SJB:dbc

cc Mr. Sid Brian, Brian Development Co., Inc.  
 Mr. Ron Rodi, Chenevert, Songy, Rodi, Soderberg

FA-1501-96/95138/shaw.112



CIVIL • ENVIRONMENTAL • LAND SURVEYING

February 29, 1996

Project No. 95138

Mr. Sid Brian  
 Brian Development Co., Inc.  
 P.O. Box 1065  
 Baton Rouge, LA 70821

<input type="checkbox"/> CDS	_____	<input checked="" type="checkbox"/> MBS	_____
<input type="checkbox"/> NJC	_____	<input type="checkbox"/> RJR	_____
<input type="checkbox"/> WCM	_____	<input type="checkbox"/> CJP	_____

Type III Landfill and Recovery Facility  
Rafe-Meyer Road  
East Baton Rouge Parish, Louisiana  
LDEQ Designation D-033-8024/PA#509

MAR 01 1996

<input type="checkbox"/>	_____	<input checked="" type="checkbox"/> JH	_____
Project No.	95127.0a		
FileName	PERMIT		

Dear Sid:

In response to a recent request from the Louisiana Department of Environmental Quality, Engineering Associates has performed a geotechnical slope stability analysis of the captioned site. Our analysis was performed based on the proposed landfill slopes shown on Exhibits 17 and 18 of the landfill permit application.

Engineering Associates has evaluated both short and long term slope stabilities during performance of construction activities, as well as final slope stabilities upon closure of the landfill. The geotechnical data available to our office for use in the attached calculations included the following:

- (1) Visual soil classifications based on six soil borings drilled at the site in September, 1995.
- (2) Measured consistency results obtained by use of a pocket penetrometer during installation of the September, 1995 soil borings.
- (3) Atterburg limits test results for a representative embankment soil sample collected by Engineering Associates on February 27, 1996.

As shown on the attached calculations, maintenance of 33% (3:1) side slopes during operation of the landfill results in a short-term slope stability factor of safety of 3.07. The factor of safety for long-term slope stability was calculated to be 1.67. Both of these factors of safety indicate that maintenance of 33% side slopes or less is acceptable.

EA-17/2-96/95138/brian.229

Mr. Brian

2

February 29, 1996

With regard to post-closure slope stabilities, the factor of safety associated with 25% (4:1) landfill cover slopes was calculated to be 2.54. As such, proposed post-closure slopes associated with the landfill are also acceptable.

It should be noted that the calculations provided herewith assume uniform soil conditions throughout the site. As with any construction project, should any signs of slope instability or unanticipated conditions be encountered in the field, a geotechnical professional should be consulted.

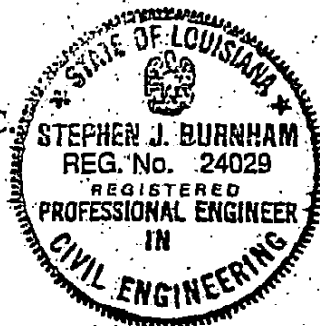
We appreciate the opportunity to be of service in this matter. Should you have any questions or require additional information, do not hesitate to call.

Sincerely,

ENGINEERING ASSOCIATES, INC.



Stephen J. Burnham, P.E.  
President



SJB:dbc

cc w/encl Mr. Jeff Sapia, Chenevert, Songy, Rodi, Soderberg



ENGINEERING  
ASSOCIATES, INC.

CONSULTING ENGINEERS

FOA 2/28/1996 LANDFILL DIKE STABILITY PROT. NO: 95138

1/10

### TYPE III LANDFILL & RECOVERY FACILITY SID BRIAN SITE

OBJECTIVE : TO DETERMINE THE STABILITY OF THE LANDFILL DIKES FOR THE TYPE III LANDFILL & RECOVERY FACILITY

- REFERENCES:
- ① DUNCAN, J.M. AND BUCHIGNANI, A.L., "AN ENGINEERING MANUAL FOR SLOPE STABILITY STUDIES" UNIVERSITY OF CALIFORNIA AT BERKELEY, MARCH 1975
  - ② HOLTE, R.D., AND KOVACS, W.D., "AN INTRODUCTION TO GEOTECHNICAL ENGINEERING" PRENTICE-HALL, 1981
  - ③ MITCHELL, J.K., "FUNDAMENTALS OF SOIL BEHAVIOR", SECOND EDITION, JOHN WILEY, 1993.
  - ④ SOIL BORING LOGS PREPARED BY ENGINEERING ASSOCIATES, INC., 1995.

#### PROCEDURE: I) PRECLOSURE SLOPE STABILITY

TO DETERMINE THE STABILITY OF THE LANDFILL DIKES PRIOR TO THE CLOSURE ACTIVITIES SHORT-TERM (DURING EXCAVATION) AND LONG-TERM (AFTER EXCAVATION) STABILITY SCENARIOS WILL BE CONSIDERED. THE LONG-TERM STABILITY OF EXCAVATION SLOPES IN COHESIVE SOILS IS MORE CRITICAL THAN SHORT-TERM STABILITY DUE TO THE SWELLING OF THE SOILS AROUND THE EXCAVATION UNDER THE REDUCED STRESSES (REF.1).

#### I. A SHORT-TERM STABILITY

SINCE THE SLOPE IS EXCAVATED MAINLY IN COHESIVE SOILS WHICH DRAIN SLOWLY (NOTE THAT THE HYDRAULIC CONDUCTIVITY OF THE DIKE MATERIAL IS IN THE MAGNITUDE OF ORDER  $10^{-8}$  CM/SEC), THE STRENGTH FOR THE SHORT TERM ANALYSES WILL BE TREATED IN TERMS OF TOTAL STRESSES.

30 SHEETS  
100 SHEETS  
200 SHEETS

22.141  
22.142  
22.144

22.141  
22.142  
22.144

EOA 2/28/1996

LANDFILL DIKE STABILITY

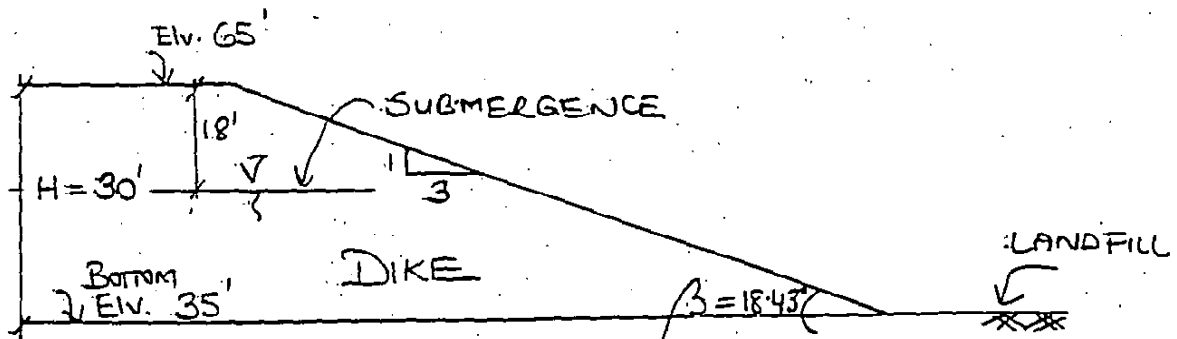
PROJ. NO.: 95138

P. 10

UNDER UNDRAINED CONDITIONS, THE STRENGTHS OF SATURATED CLAYS CAN BE EXPRESSED AS

$C = S_u =$  UNDRAINED SHEAR STRENGTH

$\phi_u = 0 =$  UNDRAINED FRICTION ANGLE



SOIL BORING LOGS SB1 & SB2 (REF 4) ENCOUNTERED MOIST ZONES AT DEPTH ABOUT 13 TO 18 FT BELOW GROUND SURFACE. FOR CONSERVATIVE STABILITY ANALYSES PURPOSES, THE EFFECT OF SUBMERGENCE IS ASSUMED TO BE LOCATED AT ABOUT 18 FEET BELOW THE GROUND SURFACE.

FROM THE BORING LOGS, THE UNDRAINED SHEAR STRENGTH PARAMETERS MEASURED BY THE POCKET PENETROMETER RANGE BETWEEN 0.5 AND 4.5 TSF (OR 1000 AND 9000 PSF) INDICATED THE POSSIBILITY FOR OVERCONSOLIDATED CLAY DEPOSITS.

THE DESIGN  $C$  WILL BE ASSUMED TO BE 2000 PSF. ASSUME THE UNIT WEIGHT OF THE CLAY  $\gamma = 120$  PCF. TO BE CONSERVATIVE <sup>DUE</sup> TO THE LACK OF INFORMATION ABOUT THE LOCATION OF THE FIRM BASE, ASSUME THE FIRM BASE IS LOCATED IN INFINITY.

FROM FIG. 6 (REF 1) FOR SLOPE ANGLE,  $\cot \beta = 3$ ,  $d = \infty$  THE STABILITY NUMBER,  $N_0 = 5.53$

CALCULATE  $P_d = \frac{\gamma H + q - \gamma_w H_w}{\mu_q \mu_w \mu_c}$  WHERE (REF 1)

$\gamma$  = AVERAGE UNIT WEIGHT OF THE SOIL, 120 PCF

$H$  = SLOPE HEIGHT, 30 FT

$q$  = SURCHARGE, 0

$\gamma_w$  = UNIT WEIGHT OF WATER, 62.4 PCF

$H_w$  = DEPTH OF WATER OUTSIDE THE SLOPE, 0

$\mu_q$  = SURCHARGE CORRECTION FACTOR, 1 FOR  $q = 0$

$\mu_w$  = SUBMERGENCE CORRECTION FACTOR, 1 FOR  $H_w = 0$

$\mu_c$  = TENSION CRACK CORRECTION FACTOR, 1 FOR NO TENSION CRACKS

EOA 2/28/1996 LANDFILL DIKE STABILITY

PROJ. No: 95138

/10

$$P_d = \gamma H = 120 \times 30 = 3600 \text{ PSF}$$

$$\text{FACTOR OF SAFETY, } FS = \frac{N_c C}{P_d}$$

$$FS = \frac{5.53 \times 2000}{3600} = 3.07 \checkmark \text{ OK}$$

ACCORDING TO TABLE 1 (REF. 1), THE FACTOR OF SAFETY OF 3.07 FOR SHORT-TERM STABILITY PRIOR TO CLOSURE ACTIVITIES IS ACCEPTABLE.

### I.B. LONG-TERM STABILITY

FOLLOWING THE EXCAVATION OF THE LANDFILL PIT, THE DIKE SLOPES WILL BE EXPOSED FOR SOME TIME UNTIL THE LANDFILL CAPACITY IS REACHED. DURING THIS TIME PERIOD, THE DRAINAGE OF THE EXCESS PORE PRESSURES WILL TAKE PLACE WHILE CHANGING THE STRENGTH PROPERTIES. THIS CONDITION WILL BE ANALYZED USING EFFECTIVE STRESS METHODS WITH THE FOLLOWING STRENGTH PROPERTIES,

$$\phi' = \text{DRAINED FRICTION ANGLE}$$

$$c' > 0$$

FROM THE ATTERBERG LIMIT TEST FOR THE INSITU SOILS

$$\text{LIQUID LIMIT} = 48$$

$$\text{PLASTIC LIMIT} = 16$$

$$\text{PLASTICITY INDEX} = LL - PL = 48 - 16 = 32$$

FROM FIG. 3.2 (REF 2); FOR  $PI = 32$  &  $LL = 48$  THE SOILS CAN BE DESCRIBED AS MEDIUM TO HIGH PLASTIC INORGANIC CLAYS.

AVERAGE VALUES FOR  $\phi'$  FOR UNDISTURBED CLAYS RANGE FROM AROUND  $20^\circ$  FOR NORMALLY CONSOLIDATED HIGHLY PLASTIC CLAYS UP TO  $30^\circ$  OR MORE FOR SILTY AND SANDY CLAYS. IF THE SOIL IS OVERCONSOLIDATED, THEN  $\phi'$  WOULD BE LESS (REF 2). FOR THIS PARTICULAR CASE  $\phi'$  WILL BE ASSUMED TO BE  $25^\circ$ .

$$\therefore \text{SO USE } \phi' = 25^\circ$$

$$c' \approx 200 \text{ psf}$$

50 SHEETS  
100 SHEETS  
200 SHEETS  
22-141  
22-142  
22-144





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LANDFILL DIKE STABILITY

PROJ. NO.: 95138

7/10

CALCULATE  $P_d = \frac{\gamma H + \gamma - \gamma_w H_w}{\mu_q \mu_w \mu_e}$  (REF 1)

$$= 120 \times 30 = 3600 \text{ PSF}$$

CALCULATE  $P_e = \frac{\gamma H + \gamma - \gamma_w H'_w}{\mu_q \mu_w}$  WHERE

$H'_w$  = HEIGHT OF WATER WITHIN SLOPE, 12 FT

$\mu_w$  = SEEPAGE CORRECTION FACTOR

FROM FIG 7, REF 1 FOR  $H'_w/H = 12/30$

$$\mu_w = 0.97$$

$$P_e = \frac{120 \times 30 - 62.4 \times 12}{0.97} = 2939.38 \text{ PSF}$$

$$\lambda_\phi = \frac{P_e \tan \phi'}{c'} = \frac{2939.38 \times \tan 25^\circ}{200} = 6.85$$

FROM FIG 9, REF 1, FOR  $\lambda_\phi = 6.85$  &  $\cot \beta = 3$  READ THE CRITICAL STABILITY NUMBER  $N_{cf} = 30$

$$\text{FACTOR OF SAFETY FS} = \frac{N_{cf} \cdot c}{P_d} = \frac{30 \times 200}{3600} = 1.67 \checkmark$$

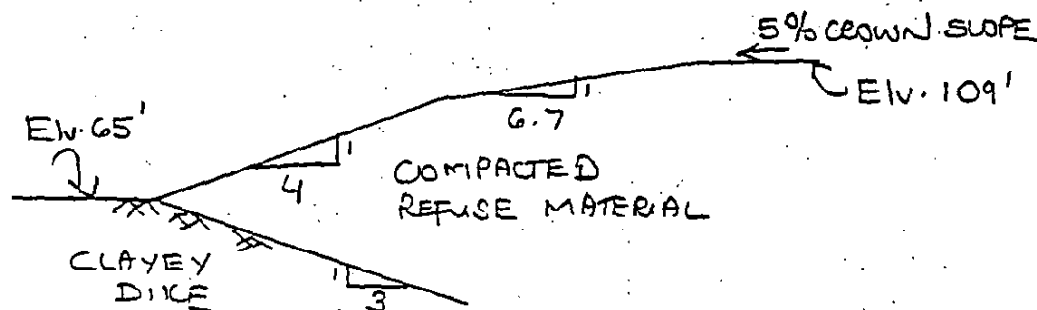
OK

ACCORDING TO TABLE 1 (REF 1), THE FACTOR OF SAFETY OF 1.67 FOR LONG TERM STABILITY IS ACCEPTABLE.

∴ THE LANDFILL DIKES WILL BE STABLE PRIOR TO THE CLOSURE BASED ON THE CALCULATIONS COMPUTED WITH THE AVAILABLE DATA.

## II POST-CLOSURE SLOPE STABILITY

FOLLOWING THE CLOSURE ACTIVITIES, THE LANDFILL SLOPES WILL HAVE THE FOLLOWING CONFIGURATION



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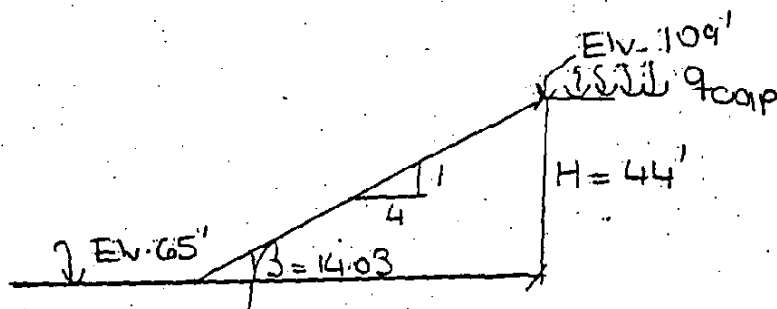
LANDFILL DIKE STABILITY

PROJ. NO: 45135

10

FOR ALL PURPOSES ASSUME THAT THE SIDE SLOPES ARE 4'H = 1V & THE HEIGHT OF THE SLOPE IS ELEV. 109' - ELEV. 65' = 44'

SINCE THE REFUSE LANDFILL MATERIAL IS COMPACTED ASSUME DRAINED CONDITIONS FOR STABILITY ANALYSIS



$$q_{top} = q(2' \text{ CLAY LINER}) + q(6'' \text{ TOPSOIL})$$

$$= 2' \times 120 \text{ (pcf)} + 0.5' \times 100 \text{ (pcf)} = 290 \text{ PSF}$$

REFUSE MATERIAL IS COMPACTED CONSTRUCTION/DEMOLITION DEBRIS MATERIAL, ASSUME A UNIT WEIGHT OF  $\gamma = 125 \text{ pcf}$ ; COHESION  $c' = 200 \text{ PSF}$ , &  $\phi' = 28^\circ$ .

CALCULATE  $P_d = \frac{\gamma H + q + \gamma_w H_w}{\mu_q \mu_w \mu_e}$  (REF 1)

$$\gamma = 125 \text{ pcf}$$

$$q = 290 \text{ PSF}$$

$$\mu_q = 0.98 \quad \text{FOR } q/\gamma H = \frac{290}{125 \times 44} = 0.05$$

$$H = 44 \text{ FT}$$

$$P_d = \frac{125 \times 44 + 290}{0.98} = 5908.16 \text{ PSF}$$

CALCULATE  $P_e = \frac{\gamma H + q - \gamma_w H_w}{\mu_q \mu_w}$

$$P_e = \frac{125 \times 44 + 290}{0.98} = 5908.16 \text{ PSF}$$

DIMENSIONLESS PARAMETER  $\lambda_{c\phi} = \frac{P_e \tan \phi}{c}$

$$\lambda_{c\phi} = \frac{5908.16 \times \tan 28}{200} = 15.71$$

FROM FIG. 9, (REF 1) FOR  $\lambda_{c\phi} = 15.71$ ,  $\cot \beta = 4$  LEAD CRITICAL STABILITY NUMBER  $N_{cf} = 15$

22-141 30 SHEETS  
22-142 100 SHEETS  
22-144 200 SHEETS



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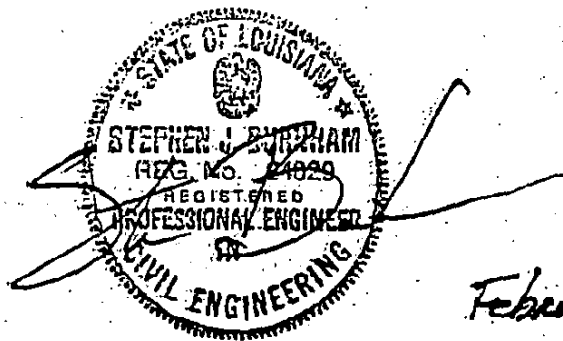
LANDFILL Dike STABILITY

PROJ. NO. 1-1-1-1

FACTOR OF SAFETY,  $FS = N_{cf} \frac{C}{P_d}$

$$FS = \frac{75 \times 200}{5908.16} = 2.54 \checkmark \text{ OK}$$

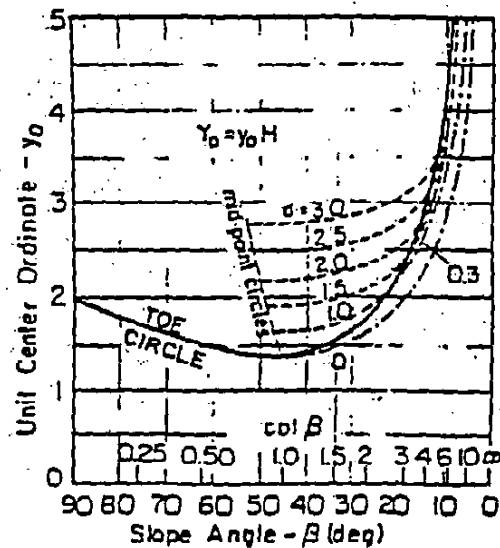
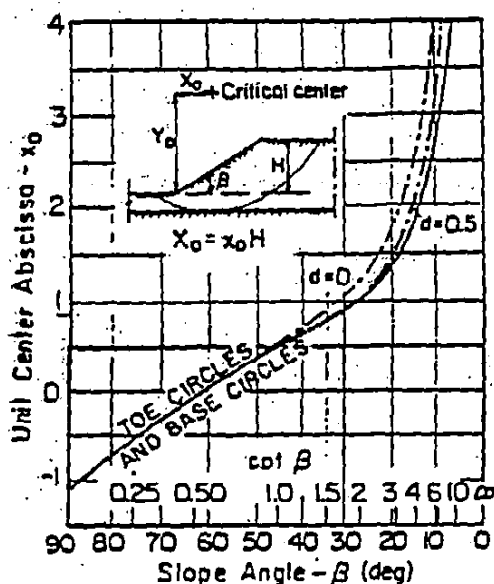
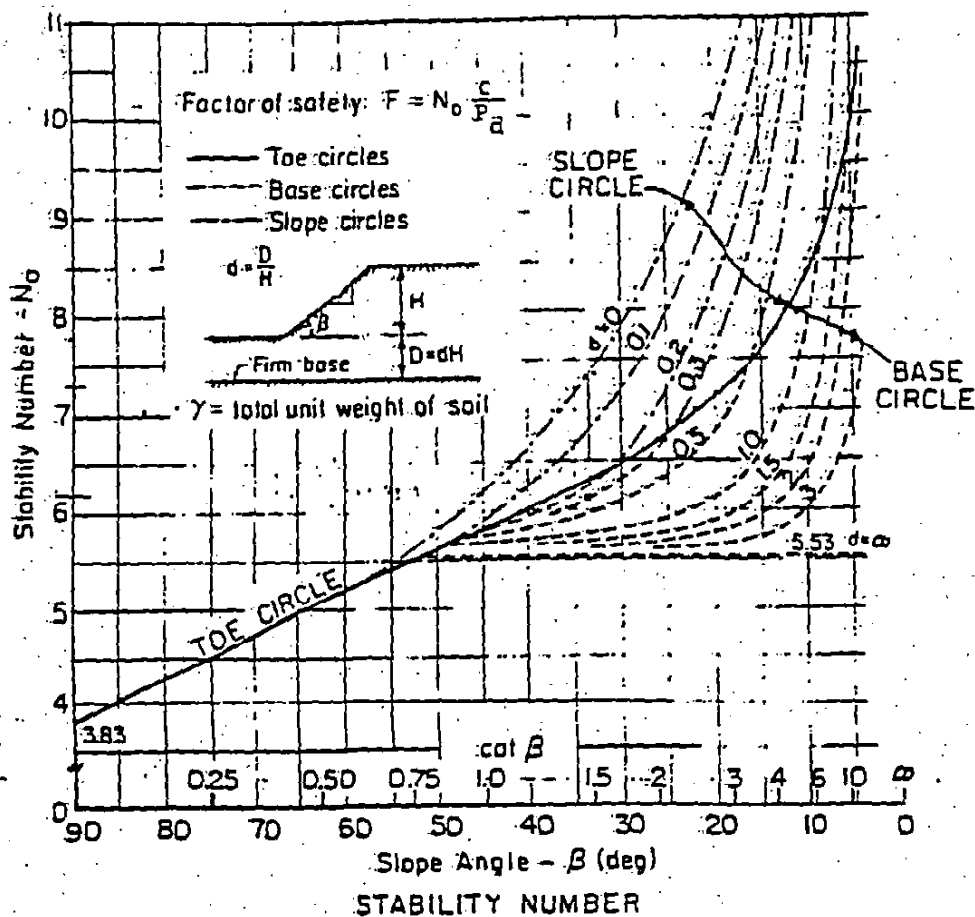
THE CLOSED LANDFILL DICES WILL BE STABLE  
WITH A SLOPE HEIGHT OF MAXIMUM 44 FEET AND  
A SLOPE OF MAXIMUM 4H:1V.



February 28, 1996

22-141 50 SHEETS  
22-142 100 SHEETS  
22-144 200 SHEETS





CENTER COORDINATES FOR CRITICAL CIRCLE

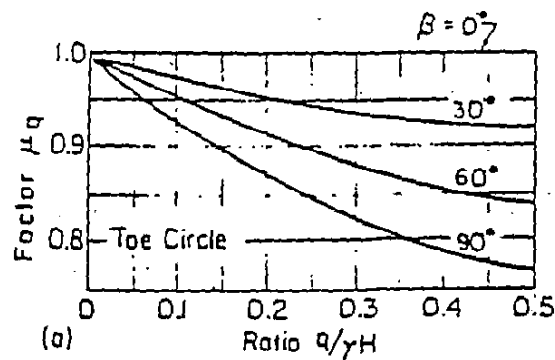
Fig. 6 SLOPE STABILITY CHARTS FOR  $\phi = 0$  SOILS. (after Janbu, 1968)

EOA 2/28/96 LANDFILL DIKE STABILITY PROJECT

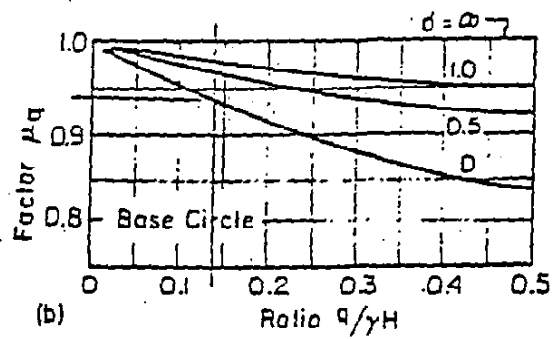
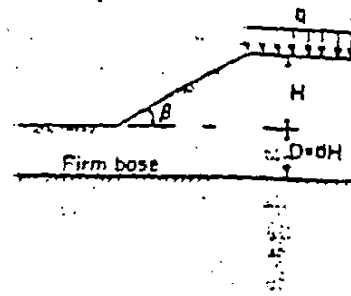
0/10

39

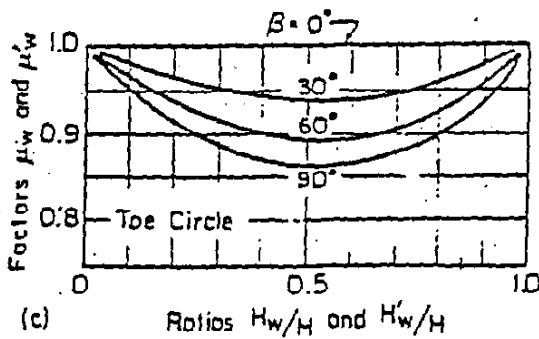
# REDUCTION FACTORS FOR SURCHARGE



Key Sketch



# REDUCTION FACTORS FOR SUBMERGENCE ( $\mu_w$ ) AND SEEPAGE ( $\mu'_w$ )



Key Sketches

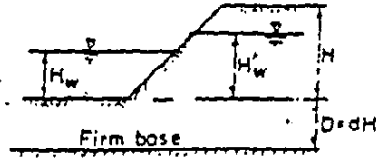
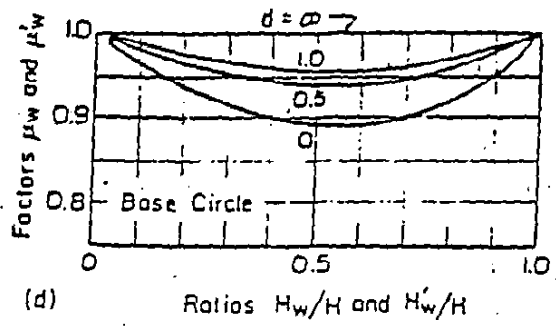
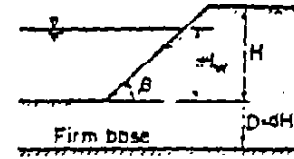
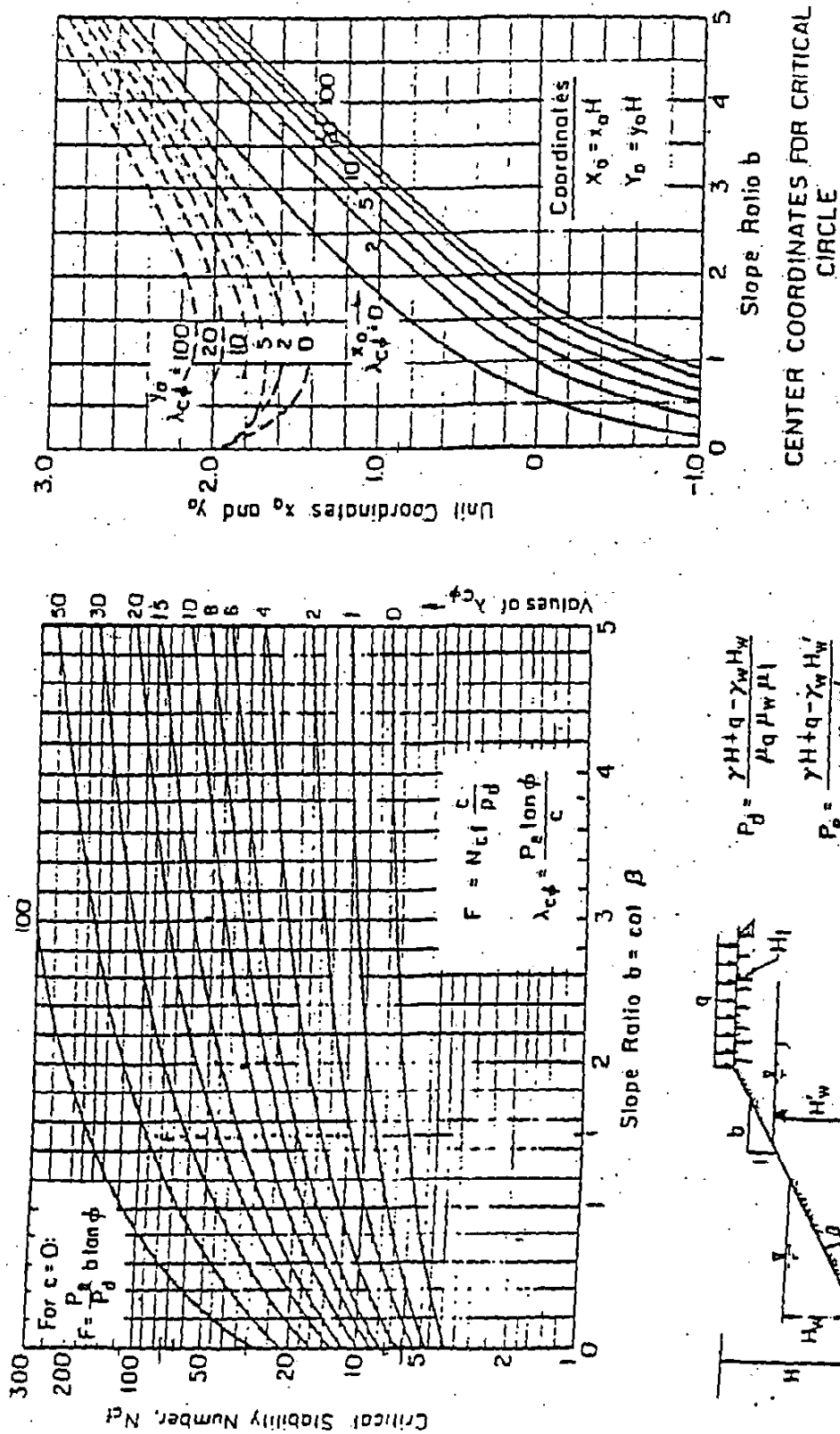


Fig. 7 REDUCTION FACTORS FOR SLOPE STABILITY CHARTS FOR  $d = 0$  AND  $d > 0$  SOILS (after Janbu, 1968)

EOA 2/28/96 LANDFILL DIKE STABILITY

Proj. No: 95138 2/10



(In formula for  $P_e$  take  $q = 0$ ,  $\mu_q = 1$  for unconsolidated condition)

Fig. 9 SLOPE STABILITY CHARTS FOR  $\phi > 0$  SOILS. (after Janbu, 1968)

ECA 2628196 LANDFILL DIKE STABILITY PROJ. No. 95138 1410

TABLE 1.-- RECOMMENDED MINIMUM VALUES OF STATIC FACTOR OF SAFETY

Costs and Consequences of Slope Failure	Uncertainty of Strength Measurements	
	Small <sup>1</sup>	Large <sup>2</sup>
Cost of repair comparable to cost of construction. No danger to human life or other property if slope fails.	1.25	1.5
Cost of repair much greater than cost of construction; or danger to human life or other valuable property if slope fails.	1.5	2.0 or greater

<sup>1</sup> The uncertainty of the strength measurements is smallest when the soil conditions are uniform and high quality strength test data provide a consistent, complete and logical picture of the strength characteristics.

<sup>2</sup> The uncertainty of the strength measurements is greatest when the soil conditions are complex and when the available strength data do not provide a consistent, complete, or logical picture of the strength characteristics.



Ardaman & Associates, Inc.  
Formerly STE  
Geotechnical, Environmental and  
Materials Consultants

March 16, 2007

Mr. Steve Burnham  
Engineering Associates, Inc.  
1415 Delplaza Dr. Suite B  
Baton Rouge, Louisiana 70815

Re: Geotechnical Investigation  
Ronaldson Field C&D Landfill  
Baton Rouge, Louisiana  
STE File: 07-L1039

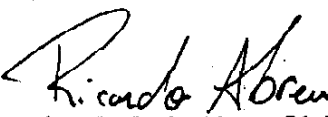
Dear Mr. Burnham:

We have completed the geotechnical investigation for this project, and our findings, together with the analyses and conclusions based on them, are submitted in the attached report. This work was authorized by your acceptance of our proposal number P0701-0225, dated February 26, 2007.

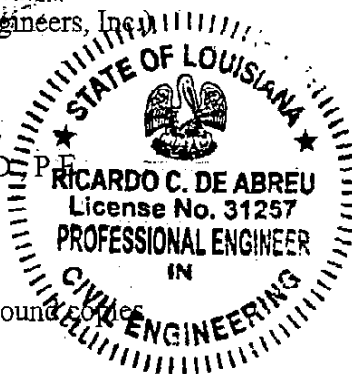
Two soil borings were drilled for this project to develop data for the stability analysis that was performed for the proposed landfill slopes, as required by the Louisiana Department of Environmental Quality (LDEQ).

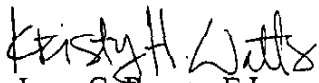
We will be pleased to discuss any questions you may have concerning this report. It has been a pleasure to work with you on this project and we look forward to serving you in the future.

Sincerely,  
Ardaman & Associates, Inc.  
(formerly Soil Testing Engineers, Inc.)

  
Ricardo C. de Abreu, Ph.D., P.E.  
Senior Engineer

RCA/JGR/rca  
(1) bound original (3) unbound copies



  
for Jesse G. Rauser, E.I.  
Assistant Project Engineer



**REPORT OF  
GEOTECHNICAL INVESTIGATION  
RONALDSON FIELD C&D LANDFILL  
BATON ROUGE, LOUISIANA**

The findings of this investigation are presented below, together with the evaluations and conclusions. The field and laboratory procedures used in this investigation are described in Appendix A.

## **1.0 SITE CONDITIONS**

In a geotechnical investigation of this nature, various aspects of site conditions must be taken into consideration. Subsurface conditions (soil and groundwater) have been investigated by performing soil borings. An understanding of site topography and the geology of the area is based upon observations made during the soil boring program and our experience in the general area. The following paragraphs provide a discussion of these various site conditions.

### **1.1 Location & Topography**

The site is located at Rafe Mayer Road in Baton Rouge, Louisiana. The topography of the site in the surroundings of the landfill is predominantly flat. The site is the location of an existing Construction and Debris (C&D) Landfill.

### **1.2 Geology**

Geologically, the site is underlain by the Prairie Terrace deposits of Pleistocene Age. These deposits consist of gray to brown clays, silty clays, and fine sands.

### **1.3 Soil Conditions**

One 80-foot boring and one 60-foot boring were drilled for this project to develop an understanding of the subsurface conditions. Although 6 soil borings were performed in the past at the facility, no soil strength tests were done. In order to adequately perform the required slope stability analysis and evaluate the strength of the subsurface soils, strength tests were performed on samples from the borings drilled for this project. The boring locations were established by Ardaman & Associates, Inc. and the landfill personnel. Approximate coordinates of the soil borings are presented in the boring logs. The approximate top elevations of the soil borings were determined based on previous topographic surveys (approximate elevation +70 ft, NGVD).

In general, the soil conditions encountered in the borings consist of medium to stiff clays and silty clays. Hard clays and sandy clays were encountered below the 32 ft depth at boring B-1 and below the 37 ft depth at boring B-2 to the final depths of exploration.

The stratification described has been simplified and is meant solely as an aid in visualizing the subsurface conditions and does not define the continuity of strata away from the borehole location. For details of the conditions encountered at the borehole, refer to the boring log in Appendix A.



## 1.4 Ground Water

The borings were initially dry-augered in order to locate ground water and observe its short-term rise characteristics. Free water could not be observed in any of the two soil borings drilled for this project. However, it should be noted that rotary wash drilling, which masks the presence of ground water, was used below the 20-foot depth in boring B-1 and below the 10-foot depth in boring B-2.

The presence of and depth to groundwater can fluctuate with rainfall, river level, or other seasonal variations, and should be verified prior to beginning any construction operations affected by groundwater. This is particularly true if construction is performed in a season other than that in which the boring is performed.

## 2.0 PROJECT CONSIDERATIONS

This section provides information regarding the project that is pertinent to the geotechnical investigation. This information includes a description of the project as provided to this office, a statement of the limitations inherent to an investigation of this nature, and a brief statement of foundation considerations based upon our findings and the anticipated construction.

### 2.1 Project Description

Information on this project was provided by Mr. Steve Burnham of Engineering Associates, Inc. According to the information provided, the Louisiana Department of Environmental Quality (LDEQ) has requested slope stability analysis to be performed for the proposed landfill slopes as part of the facility's permit renewal application.

### 2.2 Limitations

The analyses and recommendations presented in this report are based on the preceding project information and the results of the investigation. While it is not too likely that conditions will differ greatly from those observed in the soil borings, it is always possible that variations can occur away from or between the borehole locations. If it becomes apparent during construction that subsurface conditions differing significantly from those discussed in Sections 1.3 and 1.4 are being encountered, this office should be notified at once so that their effects can be determined and any remedial measures necessary be prescribed. In addition, should the nature of the project change, or final design vary from our assumptions, these recommendations may have to be re-evaluated.

This report has been prepared specifically for the Ronaldson Field C&D Landfill, and its consultants for the purpose generally described in Section 2.1 at the site described in Section 1.1. The recommendations provided are site specific and are not intended for use at any other site or for any other facility.

## 3.0 SLOPE STABILITY ANALYSIS

The expansion of the Ronaldson Field C&D Landfill will raise the maximum elevation of the landfill to approximately +195 feet NGVD. A slope stability analysis was performed to calculate the factor of safety against a slope stability failure under short and long-term conditions for the expansion of



the landfill and is presented on Appendix B of this report. Two sections were considered. Figure 1 of Appendix B shows the location of the sections analyzed. The soil borings executed for this investigation were utilized for the slope stability analysis. Conservative strength parameters were utilized for soil and waste materials in the analysis.

The minimum calculated safety factor for a circular failure surface is 1.9 for short-term conditions (undrained strength) and 2.5 for long-term conditions (drained strength). The minimum calculated safety factor for non-circular failure surface is 1.4 for short-term conditions (undrained strength) and 2.3 for long-term conditions (drained strength).

It should be noted that the undrained condition implies an instantaneous filling of landfill to the maximum height, a physical impossibility. In addition, the analyses conservatively do not consider the strength gain of the soils under the existing landfill footprint or as the future stack increases in height. Using a conservative figure of 30% in strength gain for the medium silty clays present on the site has resulted in a minimum safety factor of 1.6 for the critical short-term non-circular case.

Therefore based on the assumptions made, the analyzed sections have an adequate factor of safety against slope failure.

The soil and waste conditions, geometry, and critical potential failure surfaces are presented on Figures 2 and 3 of Appendix B.

#### 4.0 CONSULTATION

Often during final design and/or construction, questions can arise which are not specifically covered in the report. They can normally be handled by a brief telephone call or conference with the writers.



## **APPENDIX A**

# **FIELD AND LABORATORY PROCEDURES**

## APPENDIX A FIELD AND LABORATORY PROCEDURES

The following paragraphs describe the field and laboratory procedures used for this investigation. Soil Boring Logs are included with this appendix. The boring logs provide the field and laboratory data collected.

### A.1 FIELD EXPLORATION

Two soil borings were drilled for this project. Borings B-1 and B-2 was drilled on March 6 and 7, 2007, respectively. The boring locations were established by Ardaman & Associates and the landfill personnel.

#### A.1.1 Drilling Methods

The borings were drilled with buggy-mounted, rotary-type drilling equipment. Initially, the soil borings were advanced using a 4-inch diameter short flight auger. This technique allowed the proper borehole advancement to secure the appropriate samples (see "Sampling Procedures") and allowed the observation of the presence of free water in the borehole. Rotary wash drilling was also employed to advance the borings to their termination depths. The borings were grouted upon completion.

#### A.1.2 Sampling Procedures

One 60-foot boring and one 80-foot boring were drilled for this project to develop an understanding of the subsurface conditions. Continuous sampling was conducted from the top 10 feet and at 5-foot increments thereafter.

In the cohesive and semi-cohesive soils, relatively undisturbed samples were secured using a three-inch diameter, thin-wall steel tube sampler. In this sampling procedure, the borehole is advanced to the desired level, and the tube is lowered to the bottom of the boring. It is then pushed about two feet into the undisturbed soil in one continuous stroke. The sample and tube are retrieved from the borehole and detached from the drill string.

The sample is extruded by a hydraulic piston onto a rigid sample catcher to minimize disturbance. The sample is then visually classified. The classification includes description of soil color, strength estimate, identification of structural conditions (layering, seams, etc), and variations (organics, oxide inclusions, etc.). A pocket penetrometer strength test is performed. Any disturbed portions are discarded, and the sample is sealed to minimize disturbance and moisture loss during transportation to the laboratory.

In the less cohesive materials, standard penetration tests were performed; these tests provide a measure of the in-situ characteristics of the soil and secure a disturbed sample. In this test, a two-

inch OD, 1.37 ID, heavy-walled "split spoon" sampler is driven into the undisturbed soil at the bottom of the borehole with a drop hammer weighing 140 pounds and having a stroke of 30 inches. It is first seated 6 inches, then driven additional three 6-inch increments. The "Penetration Resistance" is the number of such blows required to drive the spoon the final 12 inches. It is recorded on the boring log in the following manner:

52 b/f  
12-24-26

where the numbers separated by hyphens indicate the number of blows required for each six-inch increment.

## A.2 LABORATORY PROCEDURES

Certain samples from the various strata were tested in the laboratory to determine their pertinent physical characteristics. The samples and types of tests performed were selected by a geotechnical engineer to develop information necessary for appropriate analyses. The testing program conducted is described below.

### A.2.1 Strength Tests

The strength characteristics of the various soil strata are important for geotechnical engineering analyses. Ten unconfined compression tests (ASTM D 2166) and one triaxial unconsolidated-undrained compression tests (ASTM D 2850) were performed to develop this data. The testing procedure also includes determination of the moisture content and wet and dry density of the sample.

The results of the compression tests are tabulated in the laboratory data portion of the soil boring logs under the column heading "Compressive Strength." The moisture content and dry density data are tabulated in the subsequent two columns within the laboratory data portion of the logs.

### A.2.2 Classification Tests

In order to classify the soils more definitely than can be done by field methods, twelve Atterberg limit determinations (ASTM D 4318) were made. The Atterberg limit data consist of Liquid Limit (LL), Plastic Limit (PL) and Plasticity Index (PI). The relationship among these variables is as follows:

$$PI = LL - PL$$

The Atterberg limit data are provided within the laboratory portion of the logs under the headings "LL" and "PI."

Three particle size analysis were performed to further classify certain soil samples.



# DESCRIPTION OF TERMS AND SYMBOLS USED ON SOIL BORING LOG



STE

Soil Testing Engineers, Inc.

FIELD DATA		LABORATORY DATA							Soil Type	DESCRIPTION
Ground Water Level	Depth (feet)	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits				
						LL	PL	PI		
	5									
	10									
	15									
	20									
	25									
	30									
	35									
	40									
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><b>Ground Water Levels</b></p> <p><b>Long-Term Depth</b> Depth to water after boring is completed (time noted).</p> <p><b>Short-Term Depth</b> Depth to water after initial water encountered prior to proceeding with boring (time noted).</p> <p><b>Initially Encountered</b> Depth where free water was initially encountered during augering.</p> </div> <div style="width: 45%;"> <p><b>Sampling/Field Data</b></p> <p>3.5 (P) Undisturbed 3" dia. Tube sample</p> <p>Pocket Penetrometer (P) Penetration resistance (tons/sq. ft.).</p> <p>Torvane (T) Shearing resistance (tons/sq. ft.)</p> <p>13 b/f (3-7-6) Split Spoon Std. penetration test</p> <p>Std. Penetration No. of blows per foot (blows per each six inch increments).</p> <p>Auger Disturbed (auger) collected in accordance with ASTM D-1452.</p> <p>No Recovery Sampling attempted but no sample retrieved.</p> </div> </div>										
Ground Water Level Data			Boring Advancement Method				Notes			
			Boring Abandonment Method							

Ronaldson Field C & D Landfill  
Baton Rouge, LA

# LOG OF SOIL BORING B-1



Engineering Associates, Inc.  
Baton Rouge, LA

Sheet 1 of 2

File: 07-L1039

Date: 03/06/07

Logged by: B. Savoie

Driller: D. Anthony

Rig: Ardco K-1000

LELAP Certificate No. 02052

FIELD DATA				LABORATORY DATA								Soil Type	Location: Lat. 30° 34' 0" Long. 91° 11' 11"	
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits			Percent Passing #200 Sieve	Other		Surface Elevation: N/A (ft., NGVD)	
							LL	PL	PI				Description	
<input checked="" type="checkbox"/>													Fill - Construction debris and limestone	
			4.5+ (P)										Hard brown SILTY CLAY (CL) w/gravel and organic traces	
	5		3.0 (P) 2.75 (P)	0.85	22	95	41	18	23				Medium brown and tan SILTY CLAY (CL)	
			4.5+ (P) 3.25 (P) 3.0 (P) 2.0 (P)	2.43	21	106	46	15	31				Stiff to very stiff brown and tan SILTY CLAY (CL) w/organic traces	
	10													
			3.0 (P)											
	15													
			3.75 (P) 3.5 (P)											
	20													
			3.5 (P) 4.0 (P)											
	25													
			1.5 (P) 2.25 (P)	0.90t	23	102	26	16	10				Medium gray and tan VERY SILTY CLAY (CL) w/fine sand	
	30													
			4.5+ (P)	3.10	21	105	58	15	43				Very stiff to hard gray CLAY (CH) - w/sand traces at 33 to 35 ft.	
	35													
			4.5+ (P)											
	40													

Continued Next Page

Ground Water Level Data		Boring Advancement Method		Notes
<input checked="" type="checkbox"/>	No free water encountered to 20 ft.	4" Nom. Dia. Short Flight Auger: 0 to 20 ft. 4" Dia. Rotary Wash: 20 to 80 ft.		t: Unconsolidated, Undrained Triaxial Compression Test Lateral Pressure = 21.0 psi
		Boring Abandonment Method		
		Borehole grouted with cement/ bentonite upon completion		

Strata Boundaries May Not Be Exact

Strata Boundaries May Not Be Exact



Ronaldson Field C & D Landfill  
Baton Rouge, LA

# LOG OF SOIL BORING B-1



Engineering Associates, Inc.  
Baton Rouge, LA

Sheet 2 of 2

LELAP Certificate No. 02052

File: 07-L1039

Date: 03/06/07

Logged by: B. Savoie

Driller: D. Anthony

Rig: Ardco K-1000

FIELD DATA				LABORATORY DATA							Soil Type	Location: Lat. 30° 34' 0" Long. 91° 11' 11"	
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits			Percent Passing #200 Sieve		Other	Surface Elevation: N/A (ft., NGVD)
							LL	PL	PI			Description	
												Very stiff to hard gray CLAY (CH)	
												Stiff gray SILTY CLAY (CL)	
	45		3.0 (P) 3.5 (P)	1.46	22	104	40	14	26				
	50		4.5+ (P)									Hard gray CLAY (CH)	
	55		4.5+ (P) 4.25 (P)										
	60		4.5+ (P) 4.5 (P)		24		57	18	39			- w/sand at 58 to 60 ft.	
	65	X	50 b/f 12-24-26									Hard brown and gray SANDY CLAY (CL)	
	70												
	75												
	80	X	81 b/f 42-36-45		23		35	15	20	62			
Boring completed at 80 ft.													
Ground Water Level Data				Boring Advancement Method							Notes		
<input checked="" type="checkbox"/> No free water encountered to 20 ft.				4" Nom. Dia. Short Flight Auger: 0 to 20 ft. 4" Dia. Rotary Wash: 20 to 80 ft.							Strata Boundaries May Not Be Exact		
				Boring Abandonment Method									
				Borehole grouted with cement/ bentonite upon completion									

ARD LOG01 07-L1039 GPJ LOG01 GDT 03/18/07

Ronaldson Field C & D Landfill  
Baton Rouge, LA

# LOG OF SOIL BORING B-2



File: U7-L1039  
Date: 03/07/07  
Logged by: B. Savoie  
Driller: D. Anthony  
Rig: Ardco K-1000

Engineering Associates, Inc.  
Baton Rouge, LA

Sheet 1 of 2

LELAP Certificate No. 02052

FIELD DATA				LABORATORY DATA							Soil Type	Location: Lat. 30° 34' 2" Long. 91° 11' 23"	
Ground Water Level	Depth (feet)	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits			Percent Passing #200 Sieve	Other		Surface Elevation: N/A (ft., NGVD)	Description
						LL	PL	PI					
<input checked="" type="checkbox"/>		2.5 (P)										Very stiff to hard tan and gray SILTY CLAY (CL) w/organics ~ w/debris at 0 to 2 ft.	
		4.5+ (P)											
		4.5+ (P)											
	5	4.5+ (P)											
		4.5+ (P)											
		4.5 (P)											
	10	3.5 (P)	2.78	19	107	43	16	27					
		3.25 (P)											
	15	3.5 (P)	2.82	20	107								
		4.0 (P)											Medium to stiff brown SANDY CLAY (CL)
20													
	2.75 (P)											Stiff gray CLAY (CH)	
25	2.5 (P)	1.06	24	98	33	15	18	85					
	4.0 (P)											Medium tan and gray SILTY CLAY (CL)	
30	3.5 (P)	1.36	32	88	81	22	59						
	1.75 (P)											Very stiff to hard gray CLAY (CH)	
35	1.5 (P)	0.82	24	99	40	14	26						
	3.75 (P)												
	4.0 (P)												
	40												

Continued Next Page

## Ground Water Level Data

☒ No free water encountered to 10 ft.

## Boring Advancement Method

4" Nom. Dia. Short Flight Auger:  
0 to 10 ft.  
4" Dia. Rotary Wash:  
10 to 60 ft.

## Boring Abandonment Method

Borehole grouted with cement/  
bentonite upon completion

## Notes

Strata Boundaries May Not Be Exact

ARD LOG01 07-L1039 GPJ LOG01.GDT 03/15/07

Ronaldson Field C & D Landfill  
Baton Rouge, LA

# LOG OF SOIL BORING B-2



Engineering Associates, Inc.  
Baton Rouge, LA

Sheet 2 of 2

File: 07-L1039

Date: 03/07/07

Logged by: B. Savoie

Driller: D. Anthony

Rig: Ardco K-1000

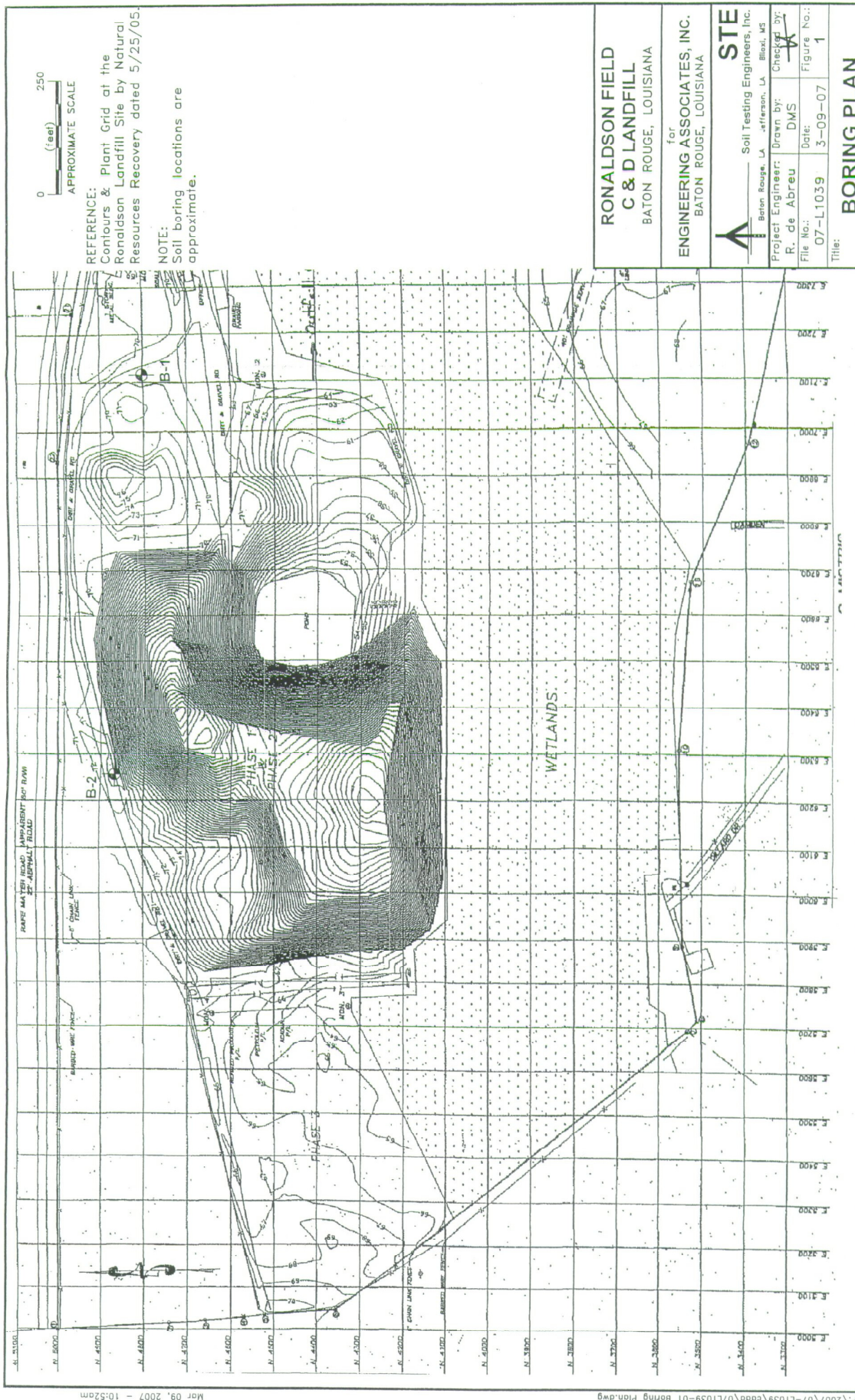
LELAP Certificate No. 02052

FIELD DATA				LABORATORY DATA							Soil Type	Location: Lat. 30° 34' 2" Long. 91° 11' 23"	
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits			Percent Passing #200 Sieve		Other	Surface Elevation: N/A (ft., NGVD)
							LL	PL	PI				Description
													Very stiff to hard gray CLAY (CH)
			4.5+ (P)										- w/sand at 43 to 60 ft.
	45												
			4.0 (P)	3.36	27	96	56	20	36	100			
	50												
			4.5+ (P)										
	55												
			4.5+ (P)										
	60												Boring completed at 60 ft.
	65												
	70												
	75												
	80												

Ground Water Level Data		Boring Advancement Method		Notes
<input checked="" type="checkbox"/>	No free water encountered to 10 ft.	4" Nom. Dia. Short Flight Auger: 0 to 10 ft. 4" Dia. Rotary Wash: 10 to 60 ft.		
		Boring Abandonment Method		
		Borehole grouted with cement/ bentonite upon completion		

Strata Boundaries May Not Be Exact

ARD LOG01 07-L1039.GPJ LOG01.GDT 03/15/07



## **APPENDIX B**

# **SLOPE STABILITY ANALYSIS**

**STE****Soil Testing Engineers, Inc.****Client:** Engineering Associates, Inc**Page:** 1 of 2**PROJECT:** Ronaldson Field C&D Landfill**FILE NO.:** 07-L1039**Subject:** Slope Stability Analysis**PREPARED BY:** RCA - **DATE:** 03-14-07**CHECKED BY:** \_\_\_\_\_ - **DATE:** \_\_\_\_\_**OBJECTIVE:**

To calculate the factor of safety against a slope stability failure under short and long term conditions for the expansion of the Ronaldson Field C&D Landfill.

**APPROACH:**

Create a model representing the final contour plan and use this model in conjunction with the computer software XSTABL to calculate the factor of safety.

**REFERENCES:**

- 1) "User's Guide: XSTABL Slope Stability Package - Version 5.2: Reference Manual", By Sunil Sharma, 1999.
- 2) Bowles, Joseph E., Physical & Geotechnical Properties of Soils, 1st Edition, McGraw-Hill, 1979, pp 378, Figure 13.21.
- 3) Contour map of the landfill.

**ASSUMPTIONS:**

- 1) Location of the cross section on attached figures.
- 2) Soil parameters for the specific sections are listed on figures.
- 3) Bishop's Method was utilized for short-term and long-term stability circular surface analyses. Rankine method was used for non-circular analysis.

**CALCULATIONS**

The following case was investigated:

The top of the final waste cell is to be at approximate elevation +195 feet. It descends with 33.3%(3H:1V) slopes and 20-ft wide benches at elevations +155 feet and +115 feet to meet the toe at the elevation +65 feet. The bottom of the cell was assumed at elevation

**STE****Soil Testing Engineers, Inc.**

**Client:** Engineering Associates, Inc  
**PROJECT:** Ronaldson Field C&D Landfill  
**Subject:** Slope Stability Analysis

**Page:** 2 of 2  
**FILE NO.:** 07-L1039  
**PREPARED BY:** RCA - **DATE:** 03-14-07  
**CHECKED BY:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

+35 ft, according to information provided by Engineering Associates, Inc. The water level was assumed at elevation +35 ft, in accordance with the previous soil borings performed.

The minimum calculated safety factor for a circular failure surface is 1.9 for short-term conditions (undrained strength) and 2.5 for long-term conditions (drained strength). The minimum calculated safety factor for non-circular failure surface is 1.4 for short-term conditions (undrained strength) and 2.3 for long-term conditions (drained strength).

It should be noted that the undrained condition implies an instantaneous filling of landfill to the maximum height, a physical impossibility. In addition, the analyses conservatively do not consider the strength gain of the soils under the existing landfill footprint or the additional strength gain as the future stack increases in height. Using a conservative figure of 30% in strength gain for the medium silty clays present on the site has resulted in a minimum safety factor of 1.6 for the critical short-term non-circular case.

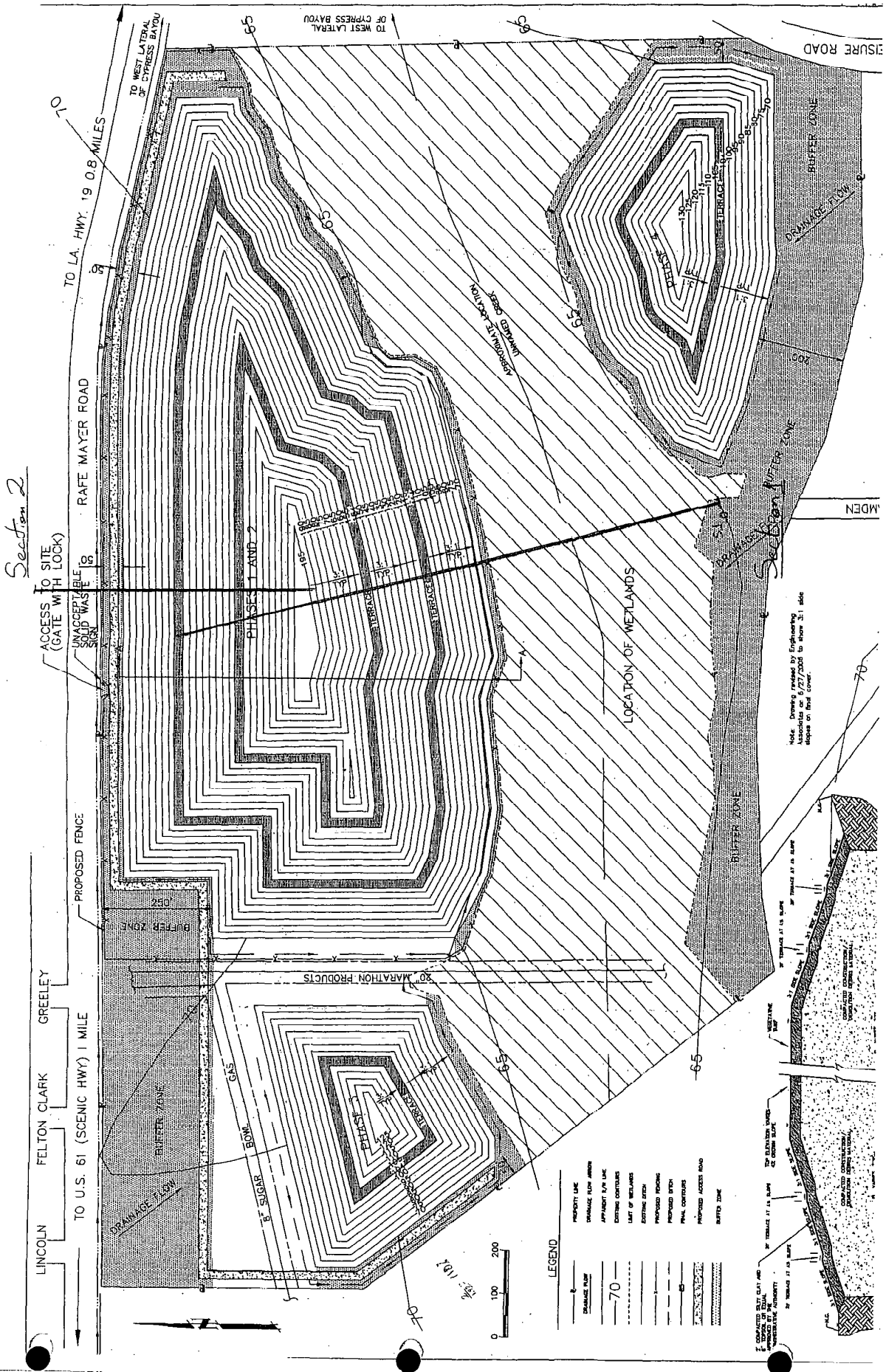
Therefore based on the assumptions made, the analyzed sections have an adequate factor of safety against slope failure.

**\*\* Computer printouts are attached**

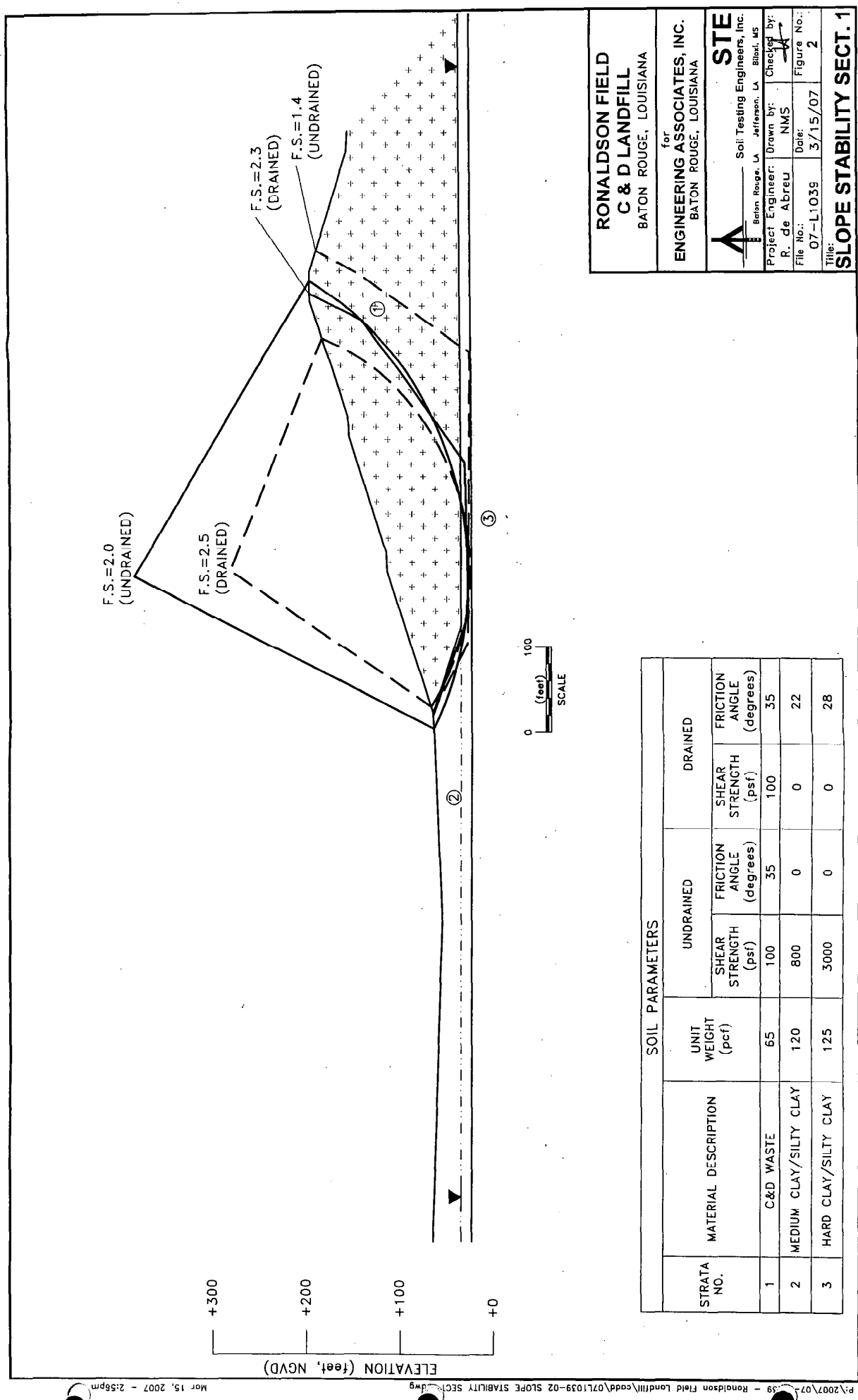


Section 2

Figure 1  
Location of  
Sections Selected  
for Slope  
Stability Analysis








SOIL PARAMETERS						
STRATA NO.	MATERIAL DESCRIPTION	UNIT WEIGHT (pcf)	UNDRAINED		DRAINED	
			SHEAR STRENGTH (psf)	FRICTION ANGLE (degrees)	SHEAR STRENGTH (psf)	FRICTION ANGLE (degrees)
1	C&D WASTE	65	100	35	100	35
2	MEDIUM CLAY/SILTY CLAY	120	800	0	0	22
3	HARD CLAY/SILTY CLAY	125	3000	0	0	28

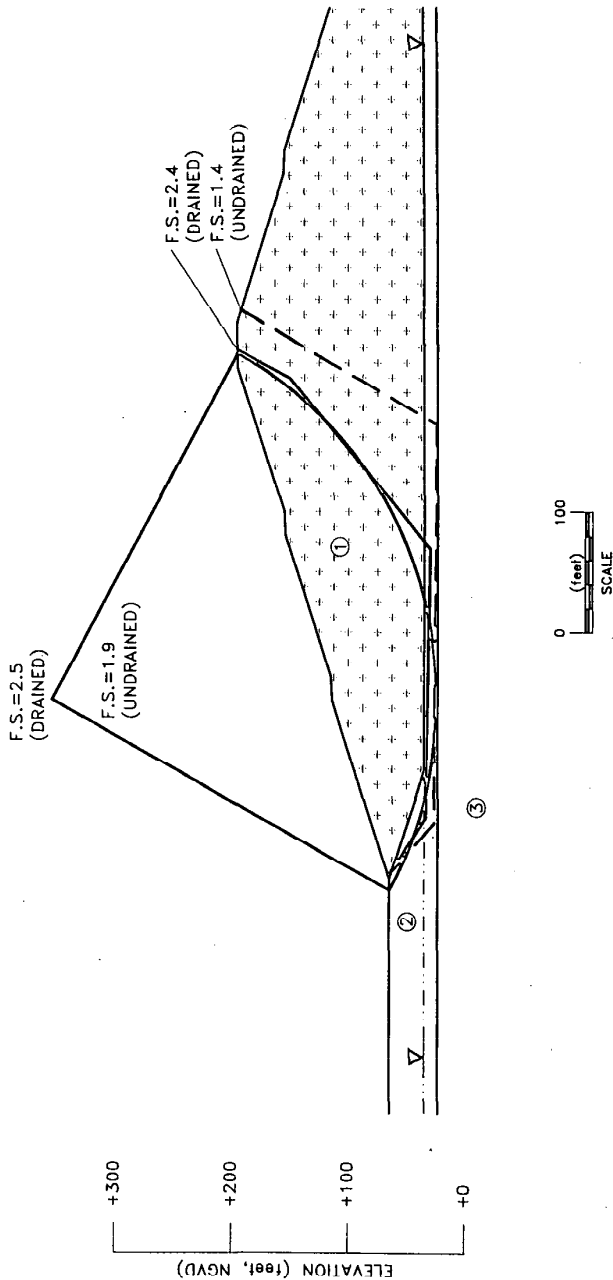
**RONALDSON FIELD**  
**C & D LANDFILL**  
BATON ROUGE, LOUISIANA

for  
**ENGINEERING ASSOCIATES, INC.**  
BATON ROUGE, LOUISIANA

 **STE**  
Soil Testing Engineers, Inc.  
Baton Rouge, LA Jefferson, LA Biloxi, MS

Project Engineer: R. de Abreu  
Drawn by: NMS  
Date: 3/15/07  
Figure No.: 2

Title: **SLOPE STABILITY SECT. 1**



SOIL PARAMETERS						
STRATA NO.	MATERIAL DESCRIPTION	UNIT WEIGHT (pcf)	UNDRAINED		DRAINED	
			SHEAR STRENGTH (psf)	FRICTION ANGLE (degrees)	SHEAR STRENGTH (psf)	FRICTION ANGLE (degrees)
1	C&D WASTE	65	100	35	100	35
2	MEDIUM CLAY/SILTY CLAY	120	800	0	0	22
3	HARD CLAY/SILTY CLAY	125	3000	0	0	28

**RONALDSON FIELD  
C & D LANDFILL**  
BATON ROUGE, LOUISIANA

for  
**ENGINEERING ASSOCIATES, INC.**  
BATON ROUGE, LOUISIANA

**STE**  
Soil Testing Engineers, Inc.  
Baton Rouge, LA Jefferson, LA Biloxi, MS

Project Engineer: Drawn By: Checked By:  
R. de Abreu NMS  
File No.: 07-L1039 Date: 3/15/07 Figure No.: 3

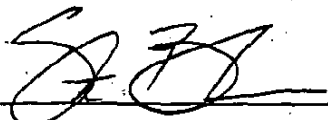
Title:  
**SLOPE STABILITY SECT. 2**

**EXHIBIT 24**  
**CERTIFICATION**

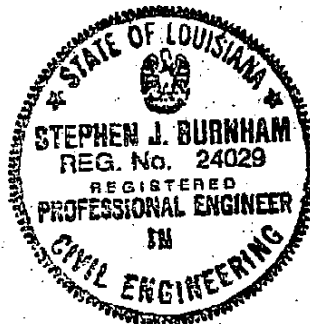
RONALDSON FIELD  
TYPE III CONSTRUCTION/DEMOLITION DEBRIS  
SOLID WASTE RENEWAL APPLICATION

CERTIFICATION

I certify under penalty of law that I have personally examined and I am familiar with the information submitted in this permit application and that the facility as described in this permit application meets the requirements of the Solid Waste Rules and Regulations. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment.



Stephen J. Burnham, P.E.  
Registered Professional Engineer  
LA Registration No. 24029



9/10/06  
Date

**EXHIBIT 25**  
**2005-2006 SOLID WASTE DISPOSER ANNUAL REPORT**

**LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY**  
**SOLID WASTE DISPOSER ANNUAL REPORT**  
 TYPE I AND II LANDFILLS, LANDFARMS, SURFACE IMPOUNDMENTS AND  
 TYPE III CONSTRUCTION/DEMOLITION DEBRIS AND WOODWASTE LANDFILLS  
 (Please Refer to the Detailed Instructions)

1. Site Identification No. D-033-8024 July 1, 2005 thru June 30, 2006
2. Permit Number P-10318 Agency Interest Number 42610
3. Name of Permit Holder Natural Resources Recovery, Inc.
4. Name of Disposal Facility RONALDSON Field Landfill (Type III)
5. Mailing Address 5800 One Perkins Place, Baton Rouge, LA 70808 Parish East Baton Rouge
6. Contact Sind Brion Telephone (225) 766-1443
7. Type of Facility: ☐ Landfill ☐ Landfarm ☐ Surface Impoundment  
☒ Construction/Demolition Debris Landfill ☐ Woodwaste Landfill
8. Surface Impoundments. This section applies only to surface impoundments.
  - A. Indicate the quantity of waste (solids/sludge) that has been removed from the surface impoundments during the past year (July 1 - June 30).  
Wet-weight Tons
  - B. Provide the identification number and permit number of the facility used to dispose of the waste.  
 Site Identification Number \_\_\_\_\_  
 Facility Permit Number \_\_\_\_\_
9. Type I, II and III Landfills, Landfarms and Surface Impoundments. This section applies only to Type I, II and III landfills, landfarms and surface impoundments.
  - A. Estimated remaining permitted capacity (expressed in wet-weight tons) 360,000
  - B. Estimated life of facility (expressed in months and based on the permitted capacity of the facility)  
86 months
10. Construction/Demolition and Woodwaste Landfills. This section applies only to construction/demolition and woodwaste landfills. Please mark all that apply.
  - ☐ This facility receives only woodwaste that are beneficially used in accordance with a Best Management Practice Plan that has been approved in writing by the Department of Agriculture and submitted to the Office of Environmental Services, Permits Division.
  - ☐ This facility receives only woodwaste resulting from utility right-of-way clearings. These woodwaste are only received from utility companies or their authorized contractors.
  - ☐ This construction/demolition debris facility receives only wastes that have been generated on-site.
  - ☐ This woodwaste facility receives only waste generated by the owner of the property on which this facility is located.

This form is to be returned to Financial Services Division at the following address no later than August 1 of each reporting year. Questions regarding the form may be directed to the Financial Services Division at 225-219-3863.

Financial Services Division  
 Attn: SW Reports  
 P. O. Box 4303  
 Baton Rouge, LA 70821-4303

July 1, 2005 thru June 30, 2006Page 2 of 4Site Identification Number D-033-8024Permit Number P-0318

11. **Summary of Non-Industrial Waste Disposed:** Provide below a summary of the non-industrial waste received for this reporting period.

**Note:** Landfarm facilities are required to report in wet-weight tons and dry-weight tons. All other facilities must report only in wet-weight tons.

(A) Non-Industrial Waste	(B) Quantity (Wet-Weight Tons)	(C) Quantity (Dry-Weight Tons)
05	41,822	
(D) TOTAL:	41,822	
(E) Quantity of Waste Received (In-State):	41,822	
(F) Quantity of Waste Received (Out-of-State):	0	

12. **CERTIFICATION:** I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signature

Date

Name and Title

SIDNEY G. BRYANPres.

(Type the name and title of the person signing the form)

[illegible]



Page 4 of 4July 1, 2005 thru June 30, 2006Site Identification Number: D-033-8024Permit Number P-0318

14. All Facilities: Provide all calculations used to compute the quantity (expressed in wet-weight tons) of solid waste received at the facility. Landfarm facilities must provide the calculations used to compute the quantity (in dry-weight tons) of solid waste received at the facility. Surface impoundments must provide all calculations used to compute the quantity of total suspended solid disposed in the facility.

See attached sheet from approved facility permit.

# **FORMULA TO DETERMINE QUANTITY (WET-WEIGHT TONNAGE) OF INCOMING SOLID WASTE**

$$A = B \times C [(D \times E \times F) + (G \times H \times I) + (J \times K \times L)] / 2,000$$

## **LEGEND OF VARIABLES**

A =	Quantity (wet-weight tonnage)	
B =	Number of loads entering the site	15 (est.)
C =	Number of cubic yards per truck	
D =	Pounds per cubic yard of limbs, leaves, straw and other yard debris (Type I)	270 (est.)
E =	Reduction factor of Type I debris	0.40 (est.)
F =	Percent of Type I debris in relation to all debris	0.90 (est.)
G =	Pounds per cubic yard of lumber and housing construction/demolition - debris (Type II)	810 (est.)
H =	Reduction factor of Type II debris	0.75 (est.)
I =	Percent of Type II debris in relation to all debris	0.08 (est.)
J =	Pounds per cubic yard of concrete, brick, asphalt and other road construction/demolition - debris (Type III)	3,240 (est.)
K =	Reduction factor of Type II debris	0.90 (est.)
L =	Percent of Type III debris in relation to all debris	0.02 (est.)

Therefore, by entering all known (est.) variables, the formula is reduced to the following:

$$A = B \times 15 \times [(270 \times 0.40 \times 0.90) + (810 \times 0.75 \times 0.08) + (3,240 \times 0.90 \times 0.02)] / 2,000$$

or

$$A = B^* \times 1.53$$

\* Number of loads entering the site becomes the only remaining variable

**LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY**  
**SOLID WASTE ANNUAL REPORT FOR TYPE III FACILITIES**  
**SEPARATION AND COMPOSTING FACILITIES**  
(Please Refer to the Detailed Instructions)

1. Site Identification Number D-033-8024 July 1, 2005 thru June 30, 2006
2. Permit Number P-0318 Agency Interest Number 42610
3. Name of Permit Holder Natural Resources Recovery, Inc.
4. Name of Facility RONALDSON Field Landfill
5. Mailing Address 5800 ONE Perkins Place  
BATON ROUGE, LA 70808 Parish EAST BATON ROUGE
6. Contact SIL BRIAN Telephone (225) 766-1443
7. Type of Facility: ☐ Composting Facility ☒ Separation Facility

## 8. SUMMARY OF SOLID WASTE RECEIVED:

ALL QUANTITIES ARE TO BE SHOWN IN WET-WEIGHT TONS

(A) Waste Number	(B) Quantity of Waste Received	(C) Quantity Re-used or Recycled	(D) Quantity Shipped Off-Site for Processing/Disposal	*(E) Transporter Number	(F) Disposer/Processor ID Number
05	41,822	13,574			
01-H (Tires)			56	0093437	RTOP0097057
01-B (Metals)			9	T0339288	N/R
03/01-E (Trash/White Goods)			1884	T-033-1565	D-033-2885 /P-0269
TOTAL:	41,822	13,574	1949		
(G) Quantity of Waste Received (In-State)			41,822		
(H) Quantity of Waste Received (Out-of-State)			0		

This form is to be returned to the Financial Services Division at the following address no later than August 1 of each reporting year. Questions regarding the form may be directed to the Financial Services Division at (225) 219-3863.

Financial Services Division  
Attn: SW Reports  
Post Office Box 4303  
Baton Rouge, LA 70821-4303

July 1, 2005 thru June 30, 2006

Page 2 of 3

Site Identification Number D-033-8024

Permit Number P-0318

9. SUMMARY OF PRODUCT USE: COPY THIS FORM AS NECESSARY

Quantity of Material Shipped Off-Site			Persons Receiving Material Shipped Off-Site for Reuse/Recycling
	Recycle	Re-Use	
01-H Tires	56		Name: Cotton Port Manofill 960 F.P. Bordelon Rd. Address: Cotton Port, LA 71327 Contact Person: Melissa Landry Telephone: 318-876-3327 Received for: <input type="checkbox"/> Reuse <input checked="" type="checkbox"/> Recycling
01-B (Metals)	9		Name: Southern Recycling 1367 Mahaffy Road Address: Port Allen, LA 70767 Contact Person: Dave Wilcox Telephone: 225-355-4453 Received for: <input type="checkbox"/> Reuse <input checked="" type="checkbox"/> Recycling
05 (Green Waste) (Mulch)		18,400	Name: Various Commercial Nurseries, City Parish, and Private Customers Address: Baton Rouge Area Contact Person: N/A Telephone: N/A Received for: <input checked="" type="checkbox"/> Reuse <input type="checkbox"/> Recycling
05 (Green Waste) (Fertilizer)		3650	Name: Georgia Pacific Port Hudson Operations Address: PO Box 538 Zachary, LA 70791 Contact Person: Ted Ward Telephone: 225-654-4845 Received for: <input checked="" type="checkbox"/> Reuse <input type="checkbox"/> Recycling
			Name: Address: Contact Person: Telephone: Received for: <input type="checkbox"/> Reuse <input type="checkbox"/> Recycling

July 1, 2005 thru June 30, 2006Site Identification Number D-033-8024Permit Number P-0318

10. This section must be completed only by Separation Facilities:  
 What percentage of the total waste stream received by the facility has been reduced?

Total Received = 41,822 TONS

Total Reduction =

(1) Tires	56 TONS
(2) Metals	9 TONS
(3) Trash/White Goods	1884 TONS
(4) Green Waste	13,574 TONS
	<u>15,523 TONS</u>

$$\text{Percent Reduction} = \frac{15,523 \text{ TONS}}{41,822 \text{ TONS}} \times 100 = \boxed{37.1\%}$$

11. Provide all calculations used to compute the quantity (expressed in wet-weight tons) of solid waste received and shipped off-site.

See attached sheet from approved facility permit.

12. CERTIFICATION: I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signature

Date

Name and Title

SIDNEY G. BRINN  
 (Type the name and title of the person signing the form)

July 31, 06  
President

# **FORMULA TO DETERMINE QUANTITY (WET-WEIGHT TONNAGE) OF INCOMING SOLID WASTE**

$$A = B \times C [(D \times E \times F) + (G \times H \times I) + (J \times K \times L)] / 2,000$$

## **LEGEND OF VARIABLES**

A =	Quantity (wet-weight tonnage)	
B =	Number of loads entering the site	
C =	Number of cubic yards per truck	15 (est.)
D =	Pounds per cubic yard of limbs, leaves, straw and other yard debris (Type I)	270 (est.)
E =	Reduction factor of Type I debris	0.40 (est.)
F =	Percent of Type I debris in relation to all debris	0.90 (est.)
G =	Pounds per cubic yard of lumber and housing construction/demolition - debris (Type II)	810 (est.)
H =	Reduction factor of Type II debris	0.75 (est.)
I =	Percent of Type II debris in relation to all debris	0.08 (est.)
J =	Pounds per cubic yard of concrete, brick, asphalt and other road construction/demolition - debris (Type III)	3,240 (est.)
K =	Reduction factor of Type III debris	0.90 (est.)
L =	Percent of Type III debris in relation to all debris	0.02 (est.)

Therefore, by entering all known (est.) variables, the formula is reduced to the following:

$$A = B \times 15 \times [(270 \times 0.40 \times 0.90) + (810 \times 0.75 \times 0.08) + (3,240 \times 0.90 \times 0.02)] / 2,000$$

or

$$A = B \times 1.53$$

\* Number of loads entering the site becomes the only remaining variable

**EXHIBIT 26**  
**METHOD OF SOLID WASTE HANDLING**  
**AND**  
**WASTE REMOVAL LOG**

## METHOD OF SOLID WASTE HANDLING

All waste loads entering the Ronaldson Field Construction/Demolition-Debris Landfill will be visually inspected (a sign is posted at the Landfill entrance listing unacceptable solid waste). Any waste loads which are determined to be unacceptable will be rejected from the site. Acceptable waste loads will have the general content and amount recorded by the Landfill Manager. Any portion of the acceptable waste loads which is determined to be unacceptable landfill material once unloaded will be separated and hauled to an approved facility or metal recycling company. A log (see attached) of the waste removed from the facility, including the date of removal and volume, will be maintained at the site.

Construction/demolition debris material will be placed in the landfill and machine compacted. Cover material will be applied to the fill areas at minimum every thirty (30) days, in accordance with Louisiana Department of Environmental Quality (LDEQ) Solid Waste Regulations. Each fill area will be closed as the process moves into new phases of the site. This process will continue until the entire landfill area is filled to final contours.

Side slopes no greater than 3(H):1(V), a minimum four percent (4%) crown slope, and vegetation will be constructed to preserve the integrity of the final cover. The final landfill configuration is shown on the map provided as Exhibit 21.



**WASTE REMOVAL LOG  
FOR  
RONALDSON FIELD**

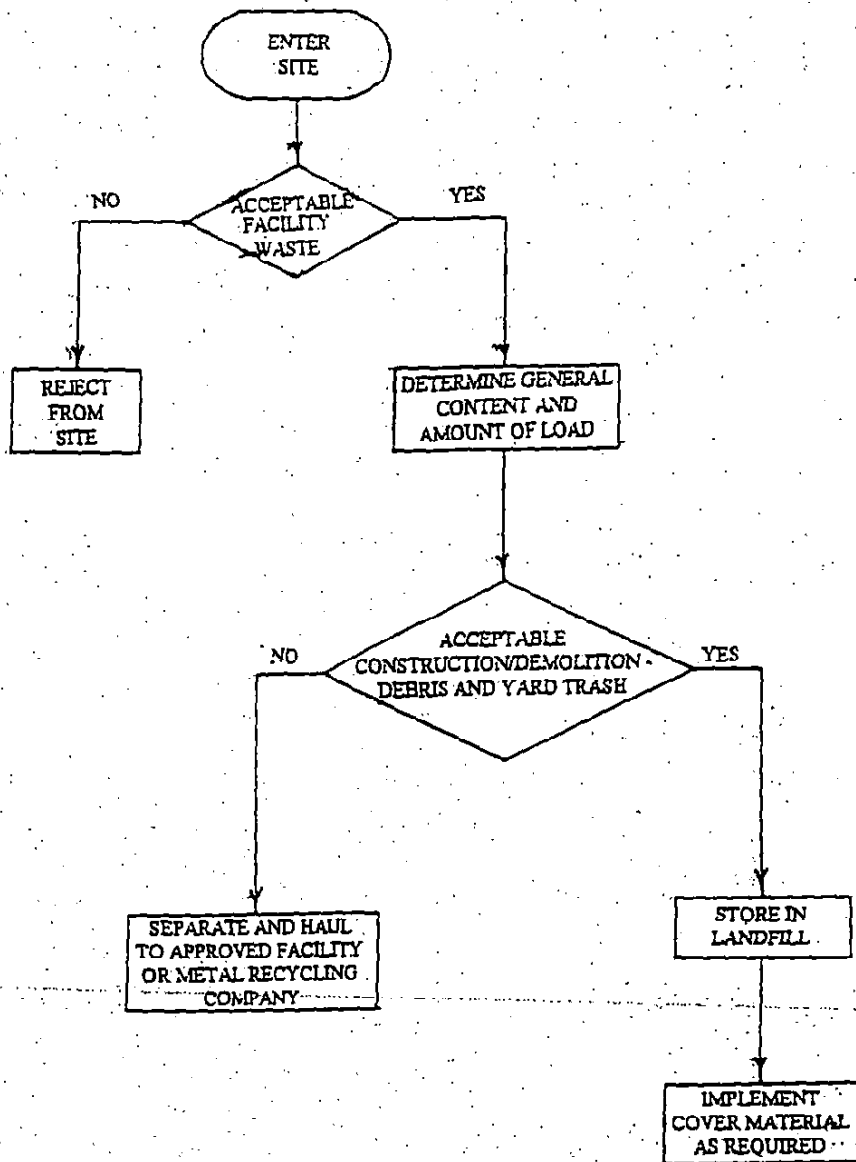
Weather Condition: \_\_\_\_\_

DATE	GENERAL CONTENT OF REMOVED WASTE	VOLUME OF REMOVED WASTE
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		

**EXHIBIT 27**  
**FLOW CHART**

RONALDSON FIELD CONSTRUCTION/DEMOLITION - DEBRIS  
LANDFILL

PROCESS FLOW CHART



**EXHIBIT 28**  
**ESTIMATED CLOSURE COSTS**

## EXHIBIT 28

## ESTIMATED CLOSURE COSTS

Ronaldson Field Construction  
And Demolition Debris Landfill  
Baton Rouge, Louisiana

## CLOSURE COSTS FOR 25 ACRES

<u>CLOSURE ACTIVITY</u>	<u>COSTS</u>
Grade Site: Load, Haul & Spread Cap Material 80,681 cy @ \$1.50/cy	\$121,021.50
Purchase top soil: Haul & Spread 20,167 cy @ \$1.50/cy	\$30,250.50
Seed & Fertilize 25 Acres @ \$250/acre	\$6,250.00
Supervision/Inspection by Professional Engineer	<u>\$4,500.00</u>
TOTAL	\$162,022.00

Note: Clay and top soil are available within the limits of the site.

**EXHIBIT 29**  
**ESTIMATED POST CLOSURE COSTS**

## EXHIBIT 29

## ESTIMATED POST CLOSURE COSTS

Ronaldson Field Construction  
And Demolition Debris Landfill  
Baton Rouge, Louisiana

## POST CLOSURE COSTS FOR 25 ACRES

<u>POST CLOSURE ACTIVITY</u>	<u>COSTS</u>
Erosion Repair	
3 years @ \$1,000/yr	\$3,000.00
Cap Integrity Maintenance and Ditch Maintenance	
3 years @ \$2,500/year	\$7,500.00
Annual Report	
3 years @ \$1,500/year	<u>\$4,500.00</u>
<b>TOTAL</b>	<b>\$15,000.00</b>

**EXHIBIT 30**  
**CONVEYANCE RECORD DOCUMENT**



**DOCUMENT TO BE FILED IN THE PARISH RECORDS UPON  
FINAL CLOSURE OF A SOLID WASTE DISPOSAL FACILITY**

Natural Resources Recovery, Inc., hereby notifies the public that the following described property was used for the disposal of solid waste. This site was closed on \_\_\_\_\_ in accordance with the Louisiana Administrative Code, Title 33, Part VII. Inquiries regarding the contents of Ronaldson Field Landfill may be directed to Sidney G. Brian at 7388 Highland Road, Suite 8, Baton Rouge, LA 70808.

**Property Description**

A 90 acre parcel of land located in Section 35, Township 5 S, Range 1 W, in East Baton Rouge Parish. The approximate center of the property is located at a latitude of 30° 33' 55" and a longitude of 91° 11' 12".

---

Sidney G. Brian

---

Date

**EXHIBIT 31**  
**LIABILITY INSURANCE INFORMATION**

Client#: 11974

NATURA

<b>ACORD - CERTIFICATE OF LIABILITY INSURANCE</b>		DATE (MM/DD/YYYY) 08/01/08
<b>PRODUCER</b> Louisiana Companies 801 North Blvd.- P. O. Box 991 Baton Rouge, LA 70821-0991 Fannie Wood, Jr. - Mary Z. Ray	THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.	
<b>INSURED</b> Natural Resources Recovery, Inc. 5800 One Perkins Place, Suite 6A Baton Rouge, LA 70808	<b>INSURERS AFFORDING COVERAGE</b>	<b>NAIC #</b>
	<b>INSURER A:</b> American International Specialty Lin	28883
	<b>INSURER B:</b> Commerce & Industry Insurance Co.	18410
	<b>INSURER C:</b>	
	<b>INSURER D:</b>	
	<b>INSURER E:</b>	

**COVERAGES**

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

LINE	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YYYY)	POLICY EXPIRATION DATE (MM/DD/YYYY)	LIMITS														
A	<b>GENERAL LIABILITY</b> <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIED PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-ASST <input type="checkbox"/> LOC	EQ3778239	08/31/06	05/31/07	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>EACH OCCURRENCE</td><td style="text-align: right;">\$1,000,000</td></tr> <tr><td>DAMAGE TO RENTED PREMISES (EA ACC/ACC/LOC)</td><td style="text-align: right;">\$200,000</td></tr> <tr><td>MED EXP (Any one person)</td><td style="text-align: right;">\$5,000</td></tr> <tr><td>PERSONAL &amp; ADV INJURY</td><td style="text-align: right;">\$1,000,000</td></tr> <tr><td>GENERAL AGGREGATE</td><td style="text-align: right;">\$2,000,000</td></tr> <tr><td>PRODUCTS - COMP/OP AGG</td><td style="text-align: right;">\$2,000,000</td></tr> </table>	EACH OCCURRENCE	\$1,000,000	DAMAGE TO RENTED PREMISES (EA ACC/ACC/LOC)	\$200,000	MED EXP (Any one person)	\$5,000	PERSONAL & ADV INJURY	\$1,000,000	GENERAL AGGREGATE	\$2,000,000	PRODUCTS - COMP/OP AGG	\$2,000,000		
EACH OCCURRENCE	\$1,000,000																		
DAMAGE TO RENTED PREMISES (EA ACC/ACC/LOC)	\$200,000																		
MED EXP (Any one person)	\$5,000																		
PERSONAL & ADV INJURY	\$1,000,000																		
GENERAL AGGREGATE	\$2,000,000																		
PRODUCTS - COMP/OP AGG	\$2,000,000																		
B	<b>AUTOMOBILE LIABILITY</b> <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS  <b>GARAGE LIABILITY</b> <input type="checkbox"/> ANY AUTO	CA3777968	05/31/06	05/31/07	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>COMBINED SINGLE LIMIT (EA accident)</td><td style="text-align: right;">\$1,000,000</td></tr> <tr><td>BODILY INJURY (Per person)</td><td style="text-align: right;">\$</td></tr> <tr><td>BODILY INJURY (Per accident)</td><td style="text-align: right;">\$</td></tr> <tr><td>PROPERTY DAMAGE (Per accident)</td><td style="text-align: right;">\$</td></tr> <tr><td>AUTO ONLY - EA ACCIDENT</td><td style="text-align: right;">\$</td></tr> <tr><td>OTHER THAN AUTO ONLY: EA ACC</td><td style="text-align: right;">\$</td></tr> <tr><td>AUTO ONLY: AGG</td><td style="text-align: right;">\$</td></tr> </table>	COMBINED SINGLE LIMIT (EA accident)	\$1,000,000	BODILY INJURY (Per person)	\$	BODILY INJURY (Per accident)	\$	PROPERTY DAMAGE (Per accident)	\$	AUTO ONLY - EA ACCIDENT	\$	OTHER THAN AUTO ONLY: EA ACC	\$	AUTO ONLY: AGG	\$
COMBINED SINGLE LIMIT (EA accident)	\$1,000,000																		
BODILY INJURY (Per person)	\$																		
BODILY INJURY (Per accident)	\$																		
PROPERTY DAMAGE (Per accident)	\$																		
AUTO ONLY - EA ACCIDENT	\$																		
OTHER THAN AUTO ONLY: EA ACC	\$																		
AUTO ONLY: AGG	\$																		
A	<b>EXCESS/UMBRELLA LIABILITY</b> <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> DEDUCTIBLE <input checked="" type="checkbox"/> RETENTION \$10000	EQ3779240	05/31/06	05/31/07	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>EACH OCCURRENCE</td><td style="text-align: right;">\$5,000,000</td></tr> <tr><td>AGGREGATE</td><td style="text-align: right;">\$5,000,000</td></tr> <tr><td></td><td style="text-align: right;">\$</td></tr> <tr><td></td><td style="text-align: right;">\$</td></tr> <tr><td></td><td style="text-align: right;">\$</td></tr> </table>	EACH OCCURRENCE	\$5,000,000	AGGREGATE	\$5,000,000		\$		\$		\$				
EACH OCCURRENCE	\$5,000,000																		
AGGREGATE	\$5,000,000																		
	\$																		
	\$																		
	\$																		
A	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/ MEMBER EXCLUDED? If yes, describe under SPECIAL PROVISIONS below				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>EL EACH ACCIDENT</td><td style="text-align: right;">\$</td></tr> <tr><td>EL DISEASE - EA EMPLOYEE</td><td style="text-align: right;">\$</td></tr> <tr><td>EL DISEASE - POLICY LIMIT</td><td style="text-align: right;">\$</td></tr> </table>	EL EACH ACCIDENT	\$	EL DISEASE - EA EMPLOYEE	\$	EL DISEASE - POLICY LIMIT	\$								
EL EACH ACCIDENT	\$																		
EL DISEASE - EA EMPLOYEE	\$																		
EL DISEASE - POLICY LIMIT	\$																		
A	<b>OTHER Pollution</b> <b>Legal Liability</b>	EQ3779239	08/31/06	05/31/07	Available upon request														

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

Supplemental Name

Natural Resources Recovery, Inc.  
 Natural Resources Recovery of Tennessee, LLC.  
 Brian Development Company, Inc.  
 (See Attached Descriptions)

**CERTIFICATE HOLDER**

Natural Resources Recovery, Inc. 5800 One Perkins Place, Suite 6A Baton Rouge, LA 70808
---

**CANCELLATION**

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL <u>30</u> DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.
AUTHORIZED REPRESENTATIVE <i>Patrick J. Rogers</i>

## SOLID WASTE FACILITY CERTIFICATE OF LIABILITY INSURANCE

Secretary  
Louisiana Department of Environmental Quality  
Post Office Box 82231  
Baton Rouge, Louisiana 70884-2231

Attention: Office of Management and Finance, Financial  
Services Division

1. AMERICAN INTERNATIONAL SPECIALTY LINES INSURANCE COMPANY, the "Insurer", of 70 Pine Street, New York, New York 10270 hereby certifies that the Insurer has issued liability insurance covering bodily injury and property damage to Natural Resources Recovery, Inc., the "Insured," of 7388 Highland RD STE. E Baton Rouge, La., in connection with the Insured's obligation to demonstrate financial responsibility under LAC 33:VII.727.A.1. The coverage applies at Permit Number P-0318, Ronaldson Field Construction & Demolition Debris Landfill, 1500 Rafe Mayer Rd. Baton Rouge, La. for sudden and accidental occurrences. The limits of liability are \$250,000 "each occurrence" and \$250,000 "annual aggregate", exclusive of legal defense costs. The coverage is provided under policy number EG 3779239, issued on March 31, 2006. The effective date of said policy is March 31, 2006.

2. The Insurer further certifies the following with respect to the insurance described in Paragraph 1:

(a) Bankruptcy or insolvency of the Insured shall not relieve the Insurer of its obligations under the policy.

(b) The Insurer is liable for the payment of amounts within any deductible applicable to the policy, with a right of reimbursement by the Insured for any such payment made by the Insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated as specified in LAC 33:VII.727.A.1...d.ii, iii, or iv.


(c) Whenever required by the administrative authority, the Insurer agrees to furnish him a signed duplicate original of the policy and all endorsements.

(d) Cancellation of the insurance, whether by the Insured or Insurer will be effective only upon written notice and only after the expiration

of 60 days after a copy of such written notice is received by the administrative authority.

(e) Any other termination of the insurance will be effective only upon written notice and only after the expiration of 30 days after a copy of such written notice is received by the administrative authority.

3. I hereby certify that the wording of this certificate is identical to the wording specified in LAC 33:VII.727.A.1.d.i.(e) as such regulations were constituted on the date first written above, and that the Insurer is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more states, and is admitted, authorized, or eligible to conduct insurance business in the state of Louisiana.



04/27/07

Robert Ussery

Risk Analyst, Middle Market, AIG Environmental

Authorized Representative of American International Specialty Lines  
Insurance Company

8144 Walnut Hill Lane, Suite 1600, Dallas, Texas 75231

**EXHIBIT 32**  
**LETTER OF CREDIT**



**Natural Resources Recovery, Inc.**  
5800 One Perkins Place 6-A  
Baton Rouge, LA 70808  
**(225) 766-1443 phone**  
(225) 766-1445 fax  
**[www.naturalresourcesrecovery.com](http://www.naturalresourcesrecovery.com)**

December 11, 2007

Ms. Janaye Tate  
Louisiana Department of Environmental Quality  
Permits Division  
P.O. Box 4314  
Baton Rouge, LA 70821

RE: Ronaldson Field Solid Waste Permit Renewal  
Baton Rouge, LA

Attached please find Letter of Credit No. 10010660, dated October 9, 2007 issued by Capital One, N.A. for Closure and Post-closure Care Costs associated with Ronaldson Field-Type III Landfill (Site ID 42610).

This information is provided in accordance with LAC 33:VII.1301.B.2.c & 1303.F.3.

Please let my office know if there is anything else you require.

Sincerely,

Tracie Albert  
Controller  
Natural Resources Recovery, Inc.



CAPITAL ONE N.A.  
FKA HIBERNIA NATIONAL BANK  
313 CARONDELET STREET  
INTERNATIONAL BANKING DEPARTMENT  
NEW ORLEANS, LA 70130  
S.W.I.F.T. HIBKUS44  
TELEPHONE: (504) 533-5801

DATE: OCTOBER 09, 2007

BENEFICIARY:  
LOUISIANA DEPARTMENT OF  
ENVIRONMENTAL QUALITY  
602 N 5TH STREET  
BATON ROUGE, LA 70802

OPENER:  
NATURAL RESOURCES RECOVERY, INC.  
5800 ONE PERKINS PLACE SUITE 6A  
BATON ROUGE, LA 70808

LC NUMBER: 10010660

AMOUNT: USD 177,022.00

EXPIRATION DATE: OCTOBER 08, 2008

RE: RONALDSON FIELD, AGENCY INTEREST #42610, PERMIT #D-033-8024/P-0318

WE HEREBY ESTABLISH OUR IRREVOCABLE STANDBY LETTER OF CREDIT NO. 10010660 IN FAVOR OF THE DEPARTMENT OF ENVIRONMENTAL QUALITY OF THE STATE OF LOUISIANA AT THE REQUEST AND FOR THE ACCOUNT OF NATURAL RESOURCES RECOVERY, INC., 5800 ONE PERKINS PLACE SUITE 6A, BATON ROUGE, LA 70808 FOR THE CLOSURE AND/OR POST-CLOSURE FUND FOR ITS LANDFILL, RONALDSON FIELD, AGENCY INTEREST #42610, PERMIT #D-033-8024/P-0318 IN BATON ROUGE, LA FOR ANY SUM OR SUMS UP TO THE AGGREGATE AMOUNT OF U.S. DOLLARS \$177,022.00 UPON PRESENTATION OF:

1. A SIGHT DRAFT, BEARING REFERENCE TO THE LETTER OF CREDIT NO. 10010660 DRAWN BY THE ADMINISTRATIVE AUTHORITY, TOGETHER WITH;
2. A STATEMENT SIGNED BY THE ADMINISTRATIVE AUTHORITY, DECLARING THAT THE AMOUNT OF THE DRAFT IS PAYABLE INTO THE STANDBY TRUST FUND PURSUANT TO THE LOUISIANA ENVIRONMENTAL QUALITY ACT, R.S. 30:2001, ET SEQ.

THE LETTER OF CREDIT IS EFFECTIVE AS OF OCTOBER 9, 2007 AND WILL EXPIRE ON OCTOBER 8, 2008, BUT SUCH EXPIRATION DATE WILL BE AUTOMATICALLY EXTENDED FOR A PERIOD OF AT LEAST ONE YEAR ON THE ABOVE EXPIRATION DATE AND ON EACH SUCCESSIVE EXPIRATION DATE THEREAFTER, UNLESS AT LEAST 120 DAYS BEFORE THE THEN-CURRENT EXPIRATION DATE, WE NOTIFY BOTH THE ADMINISTRATIVE AUTHORITY AND NATURAL RESOURCES RECOVERY, INC. BY CERTIFIED MAIL THAT WE HAVE DECIDED NOT TO EXTEND THIS LETTER OF CREDIT BEYOND THE THEN-CURRENT EXPIRATION DATE. IN THE EVENT THAT WE GIVE SUCH NOTIFICATION, ANY UNUSED PORTION OF THIS LETTER OF CREDIT SHALL BE AVAILABLE UPON PRESENTATION OF YOUR SIGHT DRAFT FOR 120 DAYS AFTER THE




Page: 2  
Reference No. 10010660  
10/9/2007


DATE OF RECEIPT BY BOTH THE DEPARTMENT OF ENVIRONMENTAL QUALITY AND  
NATURAL RESOURCES RECOVERY, INC. AS SHOWN ON THE SIGNED RETURN RECEIPTS.

WHENEVER THIS LETTER OF CREDIT IS DRAWN UNDER AND IN COMPLIANCE WITH  
THE TERMS OF THIS CREDIT, WE SHALL DULY HONOR SUCH DRAFT UPON  
PRESENTATION TO US, AND WE SHALL DEPOSIT THE AMOUNT OF THE DRAFT  
DIRECTLY INTO THE STANDBY TRUST FUND OF NATURAL RESOURCES RECOVERY,  
INC. IN ACCORDANCE WITH THE ADMINISTRATIVE AUTHORITY'S INSTRUCTIONS.

EXCEPT TO THE EXTENT OTHERWISE EXPRESSLY AGREED TO THE UNIFORM CUSTOMS  
AND PRACTICE FOR DOCUMENTARY CREDITS, 2007 REVISION, INTERNATIONAL  
CHAMBER OF COMMERCE, PUBLICATION NO. 600 SHALL APPLY TO THIS LETTER OF  
CREDIT.

WE CERTIFY THAT THE WORDING OF THIS LETTER OF CREDIT IS IDENTICAL TO  
THE WORDING SPECIFIED IN LAC 33:VII.1399 APPENDIX G, EFFECTIVE ON THE  
DATE SHOWN IMMEDIATELY BELOW.

  
\_\_\_\_\_  
ELENA RECINOS  
INTERNATIONAL SPECIALIST

  
\_\_\_\_\_  
M. TERESA HOOKER  
ASSISTANT VP

OCTOBER 9, 2007

## SCHEDULE A

*Name of Permit Holder:* Natural Resources Recovery, Inc.

*Site ID#:* AI# 42610

*Site Name:* Ronaldson Field

*Facility Name:* Ronaldson Field

*Permit#:* D-033-8024/P-0318

*Closure + Post-closure Care Costs:* \$177,022.00

*Dated:* October 4, 2007

## **SCHEDULE B**

**The Standby Trust Agreement is presently funded by the Letter of Credit used by Natural Resources Recovery, Inc., "Grantor" dated October 9, 2007.**

***Site ID:* 42610**  
***Permit#:* D-033-8024/P-0318**  
***Site Name:* Ronaldson Field**

**Capital One**  
| private client group

Bridget Crockett  
Trust Officer

Direct Telephone: (225) 381-2237  
Toll Free: (800) 572-4372 ext. 12237  
[Bridget.Crockett@capitalonebank.com](mailto:Bridget.Crockett@capitalonebank.com)

October 5, 2007

Mr. Sidney G. Brian  
Natural Resources Recovery, Inc.  
5800 One Perkins Place, Ste 6-A  
Baton Rouge, LA 70808

State of Louisiana Department of Environmental Quality  
Financial Services  
602 N. 5<sup>th</sup> Street  
Baton Rouge, LA 70802


RE: Solide Waste Facility Trust Agreement/Standby Trust Agreement by and  
between Natural Resources Recovery, Inc. and Capital One Bank, dated October 4,  
2007

Gentlemen:

This is to certify that Capital One Bank N.A. through its Institutional Client Services  
agreed to the administration of the subject trust as Trustee effective October 4, 2007.

Should you need any additional information or have any questions please feel free to  
contact me at (225)381-2237 or email [bridget.crockett@capitalonebank.com](mailto:bridget.crockett@capitalonebank.com).

Sincerely,

  
Bridget Crockett  
Trust Officer

Enclosure

## SOLID WASTE FACILITY STANDBY TRUST AGREEMENT

Standby Trust Agreement, the "Agreement" entered into as of October 4, 2007 by and between the, Natural Resources Recovery, Inc the "Grantor," and Capital One Bank, a "a state bank", the "Trustee."

WHEREAS, the Department of Environmental Quality of the State of Louisiana, an agency of the state of Louisiana, has established certain regulations applicable to the Grantor, requiring that a permit holder or applicant for a permit of a solid waste processing or disposal facility shall provide assurance that funds will be available when needed for liability or closure and/or post-closure care of the facility;

WHEREAS, the Grantor has elected to establish a trust to provide all or part of such financial assurance for the facility identified herein;

WHEREAS, the Grantor, acting through its duly authorized officers, has selected Capital One Bank to be the trustee under this Agreement, and Capital One Bank is willing to act as trustee.

NOW, THEREFORE, the Grantor and the Trustee agree as follows:

### SECTION 1. DEFINITIONS

As used in this Agreement:

(a). The term *Grantor* means the permit holder or applicant who enters into this Agreement and any successors or assigns of the Grantor.

(b). The term *Trustee* means the Trustee who enters into this Agreement and any successor trustee.

(c). The term *Secretary* means the Secretary of the Louisiana Department of Environmental Quality.

(d). The term *administrative authority* means the Secretary or a person designated by him to act therefor.

### SECTION 2. IDENTIFICATION OF FACILITIES AND COST ESTIMATES

This Agreement pertains to the facilities and cost estimates identified on attached Schedule A.

### SECTION 3. ESTABLISHMENT OF FUND

The Grantor and the Trustee hereby establish a trust fund, the "Fund", for the benefit of the Louisiana Department of Environmental Quality. The Grantor and the Trustee intend that no third party shall have access to the Fund except as herein provided. The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B attached hereto. Such property and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, in trust, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the administrative authority.

### SECTION 4. PAYMENT FOR CLOSURE AND/OR POST-CLOSURE CARE OR LIABILITY COVERAGE

The Trustee shall make payments from the Fund as the administrative authority shall direct, in writing, to provide for the payment of the costs of liability claims, closure and/or post-closure care of the facility covered by this Agreement. The Trustee shall reimburse the Grantor or other persons as specified by the administrative authority from the Fund for liability claims, closure and/or post-closure expenditures in such amounts as the administrative authority shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as the administrative authority specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

### SECTION 5. PAYMENTS COMPRISED BY THE FUND

Payments made to the Trustee for the Fund shall consist of cash or securities acceptable to the Trustee.

### SECTION 6. TRUSTEE MANAGEMENT

The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this Section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of like character and with like aims, except that:

(a) Securities or other obligations of the Grantor, or any owner of the Natural Resources Recovery, Inc. or any of their affiliates as defined in the Investment Company Act of

1940, as amended, 15 U.S.C. 80a-2.(a), shall not be acquired or held, unless they are securities or other obligations of the federal or a state government.

(b). The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the federal or state government; and

(c). The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

#### SECTION 7. COMMINGLING AND INVESTMENT

The Trustee is expressly authorized, at its discretion:

(a). To transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b). To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1, et seq., including one which may be created, managed, or underwritten, or one to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares at its discretion.

#### SECTION 8. EXPRESS POWERS OF TRUSTEE

Without in any way limiting the powers and discretion conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a). To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b). To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c). To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve Bank, but the books and records of the Trustee shall at all times show that all securities are part of the Fund;

(d). To deposit any cash in the Fund in interest-bearing accounts maintained or savings

certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the federal or state government; and

(e). To compromise or otherwise adjust all claims in favor of, or against, the Fund.

#### SECTION 9. TAXES AND EXPENSES

All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and other proper charges and disbursements of the Trustee shall be paid from the Fund.

#### SECTION 10. ANNUAL VALUATION

The Trustee shall annually, at least 30 days prior to the anniversary date of establishment of the Fund, furnish to the Grantor and to the administrative authority a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The failure of the Grantor to object in writing to the Trustee, within 90 days after the statement has been furnished to the Grantor and the administrative authority, shall constitute a conclusively binding assent by the Grantor, barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

#### SECTION 11. ADVICE OF COUNSEL

The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any questions arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

#### SECTION 12. TRUSTEE COMPENSATION

The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

#### SECTION 13. SUCCESSOR TRUSTEE

The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor or trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the



appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall in writing specify to the Grantor, the administrative authority, and the present Trustee by certified mail 10 days before such change becomes effective the date on which it assumes administration of the trust. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 9.

#### SECTION 14. INSTRUCTIONS TO THE TRUSTEE

All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by the persons designated in the attached Exhibit A or such other persons as the Grantor may designate by amendment to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the administrative authority to the Trustee shall be in writing and signed by the administrative authority. The Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or termination of the authority of any person to act on behalf of the Grantor or administrative authority hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or administrative authority, except as provided for herein.

#### SECTION 15. NOTICE OF NONPAYMENT

The Trustee shall notify the Grantor and the administrative authority, by certified mail, within 10 days following the expiration of the 30-day period after the anniversary of the establishment of the Trust, if no payment is received from the Grantor during that period. After the pay-in period is completed, the Trustee shall not be required to send a notice of nonpayment.

#### SECTION 16. AMENDMENT OF AGREEMENT

This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the administrative authority, or by the Trustee and the administrative authority, if the Grantor ceases to exist.

#### SECTION 17. IRREVOCABILITY AND TERMINATION

Subject to the right of the parties to amend this Agreement as provided in Section 16, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the administrative authority, or by the Trustee and the administrative authority, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less

final trust administration expenses, shall be delivered to the Grantor.

#### SECTION 18. IMMUNITY AND INDEMNIFICATION

The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any direction by the Grantor or the administrative authority issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all reasonable expenses incurred in its defense in the event that the Grantor fails to provide such defense.

THUS DONE AND PASSED in my office in BATON ROUGE, LA on the ~~15th~~ 4th day of OCTOBER, 2007, in the presence of CAROLYN B. DOGUE and LUELLA WILLAMON competent witnesses, who hereunto sign their names with the said appearers and me, Notary, after reading the whole.

  
 ROBERT G. GHOURAMON  
 Notary Public #50540

STATE OF LOUISIANA

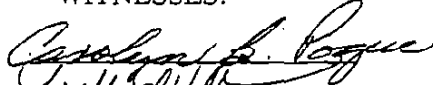
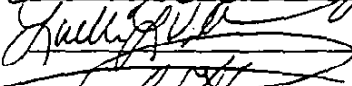
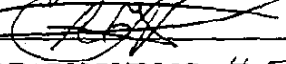
PARISH OF EAST BATON ROUGE

BE IT KNOWN, that on this 4 day of OCTOBER, 2007, before me, the undersigned Notary Public, duly commissioned and qualified within the State and Parish aforesaid, and in the presence of the witnesses hereinafter named and undersigned, personally came and appeared SIDNEY G. BRIAN, to me well known, who declared and acknowledged that he had signed and executed the foregoing instrument as his act and deed, and as the act and deed of the NATURAL RESOURCES REVENUE, INC., a corporation, for the consideration, uses, and purposes and on terms and conditions therein set forth.

And the said appearer, being by me first duly sworn, did depose and say that he is the PRESIDENT of said corporation and that he signed and executed said instrument in his said capacity, and under authority of the Board of Directors of said corporation.

Thus done and passed in the State and Parish aforesaid, on the day and date first hereinabove written, and in the presence of CAROLYN B. DOGUE and LUELLA WILLAMON, competent witnesses, who have hereunto subscribed their name as such, together with said appearer and me, said authority, after due reading of the whole.

WITNESSES:

NOTARY PUBLIC #50540  
 ROBERT G. GHOURAMON

# SECTION 19. CHOICE OF LAW

This Agreement shall be administered, construed, and enforced according to the laws of the state of Louisiana.

# SECTION 20. INTERPRETATION

As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their respective officers duly authorized [and their corporate seals to be hereunto affixed] and attested to as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in LAC 33:VII.727.A.2.d.ix, on the date first written above.

WITNESSES:

Carolyn L. Pogue  
Julie A. Earle

GRANTOR:

[Signature]  
 By: SIDNEY G. BRINN  
 Its: President

[Seal]

TRUSTEE:

Capital One Bank, N.A.  
 By: Bridget Clopper  
 Its: Trust Officer



JOHN V. EDMONSTON, JR.  
 NOTARY PUBLIC  
 Louisiana Notary I.D. # 60856  
 Parish of East Baton Rouge, Louisiana  
 My Commission is issued for life.

[Seal]

THUS DONE AND PASSED IN MY OFFICE IN Baton Rouge, LA, on the 5th day of October, 2007 in the presence of Julie A. Earle and Erin F. Garon competent witnesses, who hereunto sign their names with the said appears and me, Notary after reading the whole.

WITNESSES:

JULIE A. EARLE  
Erin F. Garon

[Signature]  
 Notary Public